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DESCRIPTION

METHOD AND REAGENT FOR THE INHIBITION OF CALCIUM ACTIVATED CHLORIDE CHANNEL-1 (CLCA-1)

Background Of The Invention

The present invention concerns compounds, compositions, and methods for the study, diagnosis, and treatment of conditions and diseases related to the expression of CLCA (Cl- Channel Ca²⁺-Activated) genes.

The following is a brief description of the current understanding of CLCAs. The discussion is not meant to be complete and is provided only for understanding the invention that follows. The summary is not an admission that any of the work described below is prior art to the claimed invention.

CLCA proteins are emerging as a new class of channel proteins that mediate Ca²⁺-activated Cl⁻ conductance in a variety of tissues. Members of the CLCA family have been cloned, isolated, and partially characterized from human, bovine, and murine species. These proteins demonstrate a high degree of homology in their size, sequence, and predicted structure yet can vary considerably in tissue distribution. Bovine CLCA1 (bCLCA1 or CaCC) was the first reported CLCA The bCLCA1 protein, which was isolated from and is exclusively detected in trachial epithelial cells, functions as a Ca²⁺-activated Cl⁻ channel (Ran and Benos, 1992, J. Biol. Chem., 267, 3618-3625; Cunningham et al., 1995, J. Biol. Chem., 270, 31016-31026). Another bovine homolog, bovine lung-endothelial cell adhesion molecule-1 (Lu-ECAM-1), appears to have involvement in the preferential metastasis of melanoma cells to the lung. Lu-ECAM-1 shares 92% nucleotide identity to bCLCA1 and is expressed in vascular endothelial cells (Elble et al., 1997, J. Biol. Chem., 272, 27853-27861). It has been shown that Lu-ECAM-1, can mediate the binding of lung-metastatic mouse B16F10 melanoma cells to endothelial cells (Zhu et al., 1992, J. Clin. Invest., 89, 1718-1724), however, due to sequence similarity to bCLCA1, the role of Lu-ECAM-1 as a chloride channel has been suggested (Elble et al., supra). The mouse homolog, mCLCA1, appears to have an expression pattern similar to the cystic fibrosis transmembrane conductance regulator (CFTR), with expression seen in various secretory epithelial cells, squamous epithelia, and in some lymphocytes (Gruber et al., 1998, Histochem. Cell Biol., 110, 43-49).

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The three human CLCA homologs (hCLCA1, hCLCA2, and hCLCA3) thus far cloned, isolated, and partially characterized, all retain sequence homology, similar cDNA length, and are all located on the short arm of chromosome 1 (1p22p31). Human CLCA proteins show a restricted pattern of expression in differing secretory tissues. Human CLCA1 was the first reported calcium activated chloride channel in humans. The 31,902-bp hCLCA1 gene is located on chromosome 1p22p31, contains 14 introns, and is preceded by a canonic promoter region that contains an L1 transposable element. Expression of hCLCA1 is predominant in intestinal basal crypt epithelia and goblet cells. A protein processing model has been proposed for hCLCA1 in which the primary translation product (125-kDa) is cleaved to a 90kDa and a group of 37- to 41-kDa proteins, the latter apparently representing different glycosylation products of the same polypeptide (Gruber et al., 1998, Genomics, 54, 200-214). Transient expression of hCLCA1 cDNA in HEK 293 cells is associated with an increase in whole-cell Ca²⁺-activated Cl⁻ conductance that is susceptible to inhibition with anion channel blocking compounds. Cell attached patch recordings of transfected cells in this study revealed single channels with a slope conductance of 13.4 pS (Gruber et al., supra).

The hCLCA2 homolog is processed in a similar manner as is hCLCA1, resulting in the formation of a heterodimer consisting of a 90-kDa amino terminal and an approximately 35-kDa carboxy terminal subunit with anchorage to the plasma membrane via four or five transmembrane domains. Expression of hCLCA2 is somewhat less restricted than that of hCLCA1, being expressed from human lung, trachea, and breast tissue (Gruber et al., 1999, Am. J. Physiol., 276, C1261-C1270). Human CLCA2 is expressed in normal breast epithelium but not in breast tumors of different stages of progression, suggesting that hCLCA2 may act as a tumor suppressor in breast cancer (Gruber et al., 1999, Cancer Res., 59, 5488-5491). Human CLCA3 is a truncated, secreted member of the CLCA family which is expressed in numerous tissues including lung, trachea, spleen, thymus, and breast Unlike hCLCA1 and hCLCA2 which are processed into heterodimers, hCLCA3 mRNA encodes a 37-kDa glycoprotein that corresponds to the N-terminal extracellular domain of its homologs. When hCLCA3 is expressed in HEK 293 or CHO cells, the 37-kDa glycoprotein is secreted (Gruber and Pauli, 1999, Biochem. Biophys. Acta, 1444, 418-423).

Holroyd *et al.*, International PCT publication No. WO/9944620, describe a calcium-activated chloride channel that is induced by IL-9.

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Summary Of The Invention

The invention features novel nucleic acid-based techniques [e.g., enzymatic nucleic acid molecules (ribozymes), antisense nucleic acids, 2-5A antisense chimeras, triplex DNA, antisense nucleic acids containing RNA cleaving chemical groups] and methods for their use to modulate the expression of CLCA (Cl- Channel Ca²⁺-Activated) genes.

In a preferred embodiment, the invention features the use of one or more of the nucleic acid-based techniques independently or in combination to inhibit the expression of the genes encoding hCLCA1, hCLCA2, hCLCA3, and hCLCA4. Specifically, the invention features the use of nucleic acid-based techniques to specifically inhibit the expression of CLCA1 (GenBank accession Nos. NM_001285, AF039400, AF039401, AF127036), CLCA2 (GenBank accession No. NM_006536), CLCA3 (GenBank accession No. NM_004921), and CLCA4 (GenBank accession No. NM_012128) genes. In yet another preferred embodiment, the invention features the inhibition of CLCA1 gene using the nucleic acid-based techniques of the instant invention.

In another preferred embodiment, the invention features the use of an enzymatic nucleic acid molecule, preferably in the hammerhead, NCH (Inozyme), G-cleaver, amberzyme, zinzyme and/or DNAzyme motif, to inhibit the expression of CLCA genes.

By "inhibit" it is meant that the activity of CLCA1 or level of RNAs or equivalent RNAs encoding one or more protein subunits of CLCA1 is reduced below that observed in the absence of the nucleic acid molecules of the invention. In one embodiment, inhibition with enzymatic nucleic acid molecules preferably is below that level observed in the presence of an enzymatically inactive or attenuated molecule that is able to bind to the same site on the target RNA, but is unable to cleave that RNA. In another embodiment, inhibition with antisense oligonucleotides is preferably below that level observed in the presence of, for example, an oligonucleotide with scrambled sequence or with mismatches. In another embodiment, inhibition of CLCA1 genes with the nucleic acid molecule of the instant invention is greater than in the presence of the nucleic acid molecule than in its absence, or the presence of a control, irrelevant, or non-inhibitory oligonucleotide.

By "enzymatic nucleic acid molecule" it is meant a nucleic acid molecule which has complementarity in a substrate binding region to a specified gene target,

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and also has an enzymatic activity which is active to specifically cleave target RNA. That is, the enzymatic nucleic acid molecule is able to intermolecularly cleave RNA and thereby inactivate a target RNA molecule. These complementary regions allow sufficient hybridization of the enzymatic nucleic acid molecule to the target RNA and thus permit cleavage. One hundred percent complementarity is preferred, but complementarity as low as 50-75% may also be useful in this invention. The nucleic acids may be modified at the base, sugar, and/or phosphate groups. The term enzymatic nucleic acid is used interchangeably with phrases such as ribozymes, catalytic RNA, enzymatic RNA, catalytic DNA, aptazyme or aptamer-binding ribozyme, regulatable ribozyme, catalytic oligonucleotides, nucleozyme, DNAzyme, RNA enzyme, endoribonuclease, endonuclease, minizyme, leadzyme, oligozyme or DNA enzyme. All of these terminologies describe nucleic acid molecules with enzymatic activity. The specific enzymatic nucleic acid molecules described in the instant application are not meant to be limiting and those skilled in the art will recognize that all that is important in an enzymatic nucleic acid molecule of this invention is that it have a specific substrate binding site which is complementary to one or more of the target nucleic acid regions, and that it have nucleotide sequences within or surrounding that substrate binding site which impart a nucleic acid cleaving activity to the molecule (Cech et al., U.S. Patent No. 4,987,071; Cech et al., 1988, JAMA).

By "nucleic acid molecule" as used herein is meant a molecule having nucleotides. The nucleic acid can be single, double, or multiple stranded and may comprise modified or unmodified nucleotides or non-nucleotides or various mixtures and combinations thereof.

By "enzymatic portion" or "catalytic domain" is meant that portion/region of the enzymatic nucleic acid molecule essential for cleavage of a nucleic acid substrate (for example, see **Figures 1-4**).

By "substrate binding arm" or "substrate binding domain" is meant that portion/region of a ribozyme which is complementary to (*i.e.*, able to base-pair with) a portion of its substrate. Generally, such complementarity is 100%, but can be less if desired. For example, as few as 10 bases out of 14 may be base-paired. Examples of such arms are shown generally in **Figures 1-4**. That is, these arms contain sequences within a ribozyme which are intended to bring ribozyme and target RNA together through complementary base-pairing interactions. The ribozyme of the invention may have binding arms that are contiguous or non-contiguous and may be of varying lengths. The length of the binding arm(s) are preferably greater than or

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equal to four nucleotides and of sufficient length to stably interact with the target RNA; specifically 12-100 nucleotides; more specifically 14-24 nucleotides long. If two binding arms are chosen, the design is such that the length of the binding arms are symmetrical (*i.e.*, each of the binding arms is of the same length; *e.g.*, five and five nucleotides, six and six nucleotides or seven and seven nucleotides long) or asymmetrical (*i.e.*, the binding arms are of different length; *e.g.*, six and three nucleotides; three and six nucleotides long; four and five nucleotides long; four and six nucleotides long; four and the like).

By "NCH" or "Inozyme" motif is meant, an enzymatic nucleic acid molecule comprising a motif as described in Ludwig *et al.*, USSN No. 09/406,643, filed September 27, 1999, entitled "COMPOSITIONS HAVING RNA CLEAVING ACTIVITY", and International PCT publication Nos. WO 98/58058 and WO 98/58057, all incorporated by reference herein in their entirety including the drawings.

By "G-cleaver" motif is meant, an enzymatic nucleic acid molecule comprising a motif as described in Eckstein *et al.*, International PCT publication No. WO 99/16871, incorporated by reference herein in its entirety including the drawings.

By "zinzyme" motif is meant, a class II enzymatic nucleic acid molecule comprising a motif as described in Beigelman *et al.*, International PCT publication No. WO 99/55857, incorporated by reference herein in its entirety including the drawings. Zinzymes represent a non-limiting example of an enzymatic nucleic acid molecule that does not require a ribonucleotide (2'-OH) group within its own nucleic acid sequence for activity.

By "amberzyme" motif is meant, a class I enzymatic nucleic acid molecule comprising a motif as described in Beigelman *et al.*, International PCT publication No. WO 99/55857, incorporated by reference herein in its entirety including the drawings. Amberzymes represent a non-limiting example of an enzymatic nucleic acid molecule that does not require a ribonucleotide (2'-OH) group within its own nucleic acid sequence for activity.

By 'DNAzyme' is meant, an enzymatic nucleic acid molecule that does not require the presence of a ribonucleotide (2'-OH) group within the DNAzyme molecule for its activity. In particular embodiments the enzymatic nucleic acid molecule may have an attached linker(s) or other attached or associated groups, moieties, or chains containing one or more nucleotides with 2'-OH groups.

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DNAzyme can be synthesized chemically or expressed endogenously *in vivo*, by means of a single stranded DNA vector or equivalent thereof.

By "sufficient length" is meant an oligonucleotide of greater than or equal to 3 nucleotides that is of a length great enough to provide the intended function under the expected condition. For example, for binding arms of enzymatic nucleic acid "sufficient length" means that the binding arm sequence is long enough to provide stable binding to a target site under the expected binding conditions. Preferably, the binding arms are not so long as to prevent useful turnover.

By "stably interact" is meant, interaction of the oligonucleotides with target nucleic acid (e.g., by forming hydrogen bonds with complementary nucleotides in the target under physiological conditions).

By "equivalent" RNA to CLCA1 is meant to include those naturally occurring RNA molecules having homology (partial or complete) to CLCA1 proteins or encoding for proteins with similar function as CLCA1 in various organisms, including human, rodent, primate, rabbit, pig, protozoans, fungi, plants, and other microorganisms and parasites. The equivalent RNA sequence also includes in addition to the coding region, regions such as 5'-untranslated region, 3'-untranslated region, intron-exon junction and the like.

By "homology" is meant the nucleotide sequence of two or more nucleic acid molecules is partially or completely identical.

By "antisense nucleic acid", it is meant a non-enzymatic nucleic acid molecule that binds to target RNA by means of RNA-RNA or RNA-DNA or RNA-PNA (protein nucleic acid; Egholm et al., 1993 Nature 365, 566) interactions and alters the activity of the target RNA (for a review, see Stein and Cheng, 1993 Science 261, 1004 and Woolf et al., US patent No. 5,849,902). Typically, antisense molecules will be complementary to a target sequence along a single contiguous sequence of the antisense molecule. However, in certain embodiments, an antisense molecule may bind to substrate such that the substrate molecule forms a loop, and/or an antisense molecule may bind such that the antisense molecule forms a loop. Thus, the antisense molecule may be complementary to two (or even more) noncontiguous substrate sequences or two (or even more) non-contiguous substrate sequences or two (or even more) non-contiguous sequence portions of an antisense molecule may be complementary to a target sequence or both. For a review of current antisense strategies, see Schmajuk et al., 1999, J. Biol. Chem., 274, 21783-21789, Delihas et al., 1997, Nature, 15, 751-753, Stein et al.,

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1997, Antisense N. A. Drug Dev., 7, 151, Crooke, 1998, Biotech. Genet. Eng. Rev., 15, 121-157, Crooke, 1997, Ad. Pharmacol., 40, 1-49. In addition, antisense DNA can be used to target RNA by means of DNA-RNA interactions, thereby activating RNase H, which digests the target RNA in the duplex. Antisense DNA can be synthesized chemically or expressed via the use of a single stranded DNA expression vector or equivalent thereof.

By "2-5A antisense chimera" it is meant, an antisense oligonucleotide containing a 5'-phosphorylated 2'-5'-linked adenylate residue. These chimeras bind to target RNA in a sequence-specific manner and activate a cellular 2-5A-dependent ribonuclease which, in turn, cleaves the target RNA (Torrence *et al.*, 1993 *Proc. Natl. Acad. Sci. USA* 90, 1300).

By "triplex DNA" it is meant an oligonucleotide that can bind to a double-stranded DNA in a sequence-specific manner to form a triple-strand helix. Formation of such triple helix structure has been shown to inhibit transcription of the targeted gene (Duval-Valentin *et al.*, 1992 *Proc. Natl. Acad. Sci. USA* 89, 504).

By "gene" it is meant a nucleic acid that encodes an RNA.

By "complementarity" is meant that a nucleic acid can form hydrogen bond(s) with another RNA sequence by either traditional Watson-Crick or other nontraditional types. In reference to the nucleic molecules of the present invention, the binding free energy for a nucleic acid molecule with its target or complementary sequence is sufficient to allow the relevant function of the nucleic acid to proceed, e.g., ribozyme cleavage, antisense or triple helix inhibition. Determination of binding free energies for nucleic acid molecules is well known in the art (see, e.g., Turner et al., 1987, CSH Symp. Quant. Biol. LII pp.123-133; Frier et al., 1986, Proc. Nat. Acad. Sci. USA 83:9373-9377; Turner et al., 1987, J. Am. Chem. Soc. 109:3783-3785). A percent complementarity indicates the percentage of contiguous residues in a nucleic acid molecule which can form hydrogen bonds (e.g., Watson-Crick base pairing) with a second nucleic acid sequence (e.g., 5, 6, 7, 8, 9, 10 out of 10 being 50%, 60%, 70%, 80%, 90%, and 100% complementary). "Perfectly complementary" means that all the contiguous residues of a nucleic acid sequence will hydrogen bond with the same number of contiguous residues in a second nucleic acid sequence.

At least seven basic varieties of naturally occurring enzymatic nucleic acids are known presently. Each can catalyze the hydrolysis of RNA phosphodiester bonds in *trans* (and thus can cleave other RNA molecules) under physiological

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conditions. Table I summarizes some of the characteristics of these ribozymes. In general, enzymatic nucleic acids act by first binding to a target RNA. Such binding occurs through the target binding portion of a enzymatic nucleic acid which is held in close proximity to an enzymatic portion of the molecule that acts to cleave the target RNA. Thus, the enzymatic nucleic acid first recognizes and then binds a target RNA through complementary base-pairing, and once bound to the correct site, acts enzymatically to cut the target RNA. Strategic cleavage of such a target RNA will destroy its ability to direct synthesis of an encoded protein. After an enzymatic nucleic acid has bound and cleaved its RNA target, it is released from that RNA to search for another target and can repeatedly bind and cleave new targets. Thus, a single ribozyme molecule is able to cleave many molecules of target RNA. In addition, the ribozyme is a highly specific inhibitor of gene expression, with the specificity of inhibition depending not only on the base-pairing mechanism of binding to the target RNA, but also on the mechanism of target RNA cleavage. Single mismatches, or base-substitutions, near the site of cleavage can completely eliminate catalytic activity of a ribozyme.

The enzymatic nucleic acid molecule that cleave the specified sites in CLCA1-specific RNAs represent a novel therapeutic approach to treat Chronic Obstructive Pulmonary Diseases (COPDs), chronic bronchitis, asthma, cystic fibrosis, obstructive bowel syndrome, and other indications that may respond to the level of CLCA1.

In one of the preferred embodiments of the inventions described herein, the enzymatic nucleic acid molecule is formed in a hammerhead or hairpin motif, but may also be formed in the motif of a hepatitis delta virus, group I intron, group II intron or RNase P RNA (in association with an RNA guide sequence), Neurospora VS RNA, DNAzymes, NCH cleaving motifs, or G-cleavers. Examples of such hammerhead motifs are described by Dreyfus, supra, Rossi et al., 1992, AIDS Research and Human Retroviruses 8, 183; Examples of hairpin motifs are described by Hampel et al., EP0360257, Hampel and Tritz, 1989 Biochemistry 28, 4929, Feldstein et al., 1989, Gene 82, 53, Haseloff and Gerlach, 1989, Gene, 82, 43, Hampel et al., 1990 Nucleic Acids Res. 18, 299; Chowrira & McSwiggen, US. Patent No. 5,631,359. The hepatitis delta virus motif is described by Perrotta and Been, 1992 Biochemistry 31, 16. The RNase P motif is described by Guerrier-Takada et al., 1983 Cell 35, 849; Forster and Altman, 1990, Science 249, 783; Li and Altman, 1996, Nucleic Acids Res. 24, 835. Neurospora VS RNA ribozyme motif is described by Collins (Saville and Collins, 1990 Cell 61, 685-696; Saville and Collins, 1991 Proc. Natl. Acad. Sci. USA 88, 8826-8830; Collins and Olive, 1993

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Biochemistry 32, 2795-2799; Guo and Collins, 1995, EMBO. J. 14, 363). Group II introns are described by Griffin et al., 1995, Chem. Biol. 2, 761; Michels and Pyle, 1995, Biochemistry 34, 2965; Pyle et al., International PCT Publication No. WO 96/22689. The Group I intron is described by Cech et al., U.S. Patent 4,987,071. DNAzymes are described by Usman et al., International PCT Publication No. WO 95/11304; Chartrand et al., 1995, NAR 23, 4092; Breaker et al., 1995, Chem. Bio. 2, 655; Santoro et al., 1997, PNAS 94, 4262. NCH cleaving motifs are described in Ludwig & Sproat, International PCT Publication No. WO 98/58058; and G-cleavers are described in Kore et al., 1998, Nucleic Acids Research 26, 4116-4120 and Eckstein et al., International PCT Publication No. WO 99/16871. Additional motifs such as the Aptazyme (Breaker et al., WO 98/43993), Amberzyme (Class I motif; Figure 3; Beigelman et al., International PCT publication No. WO 99/55857) and Zinzyme (Beigelman et al., International PCT publication No. WO 99/55857), all these references are incorporated by reference herein in their totalities, including drawings and can also be used in the present invention. These specific motifs are not limiting in the invention. and those skilled in the art will recognize that all that is important in an enzymatic nucleic acid molecule of this invention is that it has a specific substrate binding site which is complementary to one or more of the target gene RNA regions, and that it have nucleotide sequences within or surrounding that substrate binding site which impart an RNA cleaving activity to the molecule (Cech et al., U.S. Patent No. 4,987,071).

In preferred embodiments of the present invention, a nucleic acid molecule, *e.g.*, an antisense molecule, a triplex DNA, or a ribozyme, is 13 to 100 nucleotides in length, *e.g.*, in specific embodiments 35, 36, 37, or 38 nucleotides in length (*e.g.*, for particular ribozymes or antisense). In particular embodiments, the nucleic acid molecule is 15-100, 17-100, 20-100, 21-100, 23-100, 25-100, 27-100, 30-100, 32-100, 35-100, 40-100, 50-100, 60-100, 70-100, or 80-100 nucleotides in length. Instead of 100 nucleotides being the upper limit on the length ranges specified above, the upper limit of the length range can be, for example, 30, 40, 50, 60, 70, or 80 nucleotides. Thus, for any of the length ranges, the length range for particular embodiments has lower limit as specified, with an upper limit as specified which is greater than the lower limit. For example, in a particular embodiment, the length range can be 35-50 nucleotides in length. All such ranges are expressly included. Also in particular embodiments, a nucleic acid molecule can have a length which is any of the lengths specified above, for example, 21 nucleotides in length.

In a preferred embodiment, the invention provides a method for producing a class of nucleic acid-based gene inhibiting agents which exhibit a high degree of

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specificity for the RNA of a desired target. For example, the enzymatic nucleic acid molecule is preferably targeted to a highly conserved sequence region of target RNAs encoding CLCA proteins (for example, CLCA1, CLCA2, CLCA3 and/or CLCA4) such that specific treatment of a disease or condition can be provided with either one or several nucleic acid molecules of the invention. Such nucleic acid molecules can be delivered exogenously to specific tissue or cellular targets as required. Alternatively, the nucleic acid molecules (e.g., ribozymes and antisense) can be expressed from DNA and/or RNA vectors that are delivered to specific cells.

In a preferred embodiment, the invention features the use of nucleic acid-based inhibitors of the invention to specifically target genes that share homology with the CLCA1 gene.

As used herein "cell" is used in its usual biological sense, and does not refer to an entire multicellular organism, e.g., specifically does not refer to a human. The cell may be present in a non-human multicellular organism, e.g., birds, plants and mammals such as cows, sheep, apes, monkeys, swine, dogs, and cats.

By "CLCA proteins" is meant, a protein or a mutant protein derivative thereof, comprising a calcium activated chloride channel protein.

By "highly conserved sequence region" is meant, a nucleotide sequence of one or more regions in a target gene does not vary significantly from one generation to the other or from one biological system to the other.

The nucleic acid-based inhibitors of CLCA1 expression are useful for the prevention and/or treatment of diseases and conditions including Chronic Obstructive Pulmonary Disease (COPD), chronic bronchitis, asthma, cystic fibrosis, obstructive bowel syndrome, and any other diseases or conditions that are related to or will respond to the levels of CLCA1 in a cell or tissue, alone or in combination with other therapies.

By "related" is meant that the reduction of CLCA1 expression (specifically CLCA1 gene) RNA levels and thus reduction in the level of the respective protein will relieve, to some extent, the symptoms of the disease or condition.

The nucleic acid-based inhibitors of the invention are added directly, or can be complexed with cationic lipids, packaged within liposomes, or otherwise delivered to target cells or tissues. The nucleic acid or nucleic acid complexes can be locally administered to relevant tissues *ex vivo*, or *in vivo* through injection, infusion pump

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or stent, with or without their incorporation in biopolymers. In preferred embodiments, the enzymatic nucleic acid inhibitors comprise sequences, which are complementary to the substrate sequences in **Tables III to IX**. Examples of such enzymatic nucleic acid molecules also are shown in **Tables III to IX**. Examples of such enzymatic nucleic acid molecules consist essentially of sequences defined in these Tables.

In yet another embodiment, the invention features antisense nucleic acid molecules and 2-5A chimera including sequences complementary to the substrate sequences shown in Tables III to IX. Such nucleic acid molecules can include sequences as shown for the binding arms of the enzymatic nucleic acid molecules in Tables III to VIII and sequences shown as GeneBloc™ sequences in Table IX. Similarly, triplex molecules can be provided targeted to the corresponding DNA target regions, and containing the DNA equivalent of a target sequence or a sequence complementary to the specified target (substrate) sequence. Typically, antisense molecules will be complementary to a target sequence along a single contiguous sequence of the antisense molecule. However, in certain embodiments, an antisense molecule may bind to substrate such that the substrate molecule forms a loop, and/or an antisense molecule may bind such that the antisense molecule forms a loop. Thus, the antisense molecule may be complementary to two (or even more) noncontiguous substrate sequences or two (or even more) non-contiguous sequence portions of an antisense molecule may be complementary to a target sequence or both.

By "consists essentially of" is meant that the active nucleic acid molecule of the invention, for example, an enzymatic nucleic acid molecule, contains an enzymatic center or core equivalent to those in the examples, and binding arms able to bind RNA such that cleavage at the target site occurs. Other sequences can be present which do not interfere with such cleavage. Thus, a core region can, for example, include one or more loop, stem-loop structure, or linker which does not prevent enzymatic activity. Thus, the underlined regions in the sequences in **Tables III**, **IV** and **VIII** can be such a loop, stem-loop, nucleotide linker, and/or non-nucleotide linker and can be represented generally as sequence "X". For example, a core sequence for a hammerhead enzymatic nucleic acid can comprise a conserved sequence, such as 5'-CUGAUGAG-3' and 5'-CGAA-3' connected by "X", where X is 5'-GCCGUUAGGC-3' (SEQ ID NO 5450), or any other Stem II region known in the art.

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In another aspect of the invention, ribozymes or antisense molecules that interact with target RNA molecules and inhibit CLCA1 (specifically CLCA1 gene) activity are expressed from transcription units inserted into DNA or RNA vectors. The recombinant vectors are preferably DNA plasmids or viral vectors. Ribozyme or antisense expressing viral vectors could be constructed based on, but not limited to, adeno-associated virus, retrovirus, adenovirus, or alphavirus. Preferably, the recombinant vectors capable of expressing the ribozymes or antisense are delivered as described above, and persist in target cells. Alternatively, viral vectors may be used that provide for transient expression of ribozymes or antisense. Such vectors can be repeatedly administered as necessary. Once expressed, the ribozymes or antisense bind to the target RNA and inhibit its function or expression. Delivery of ribozyme or antisense expressing vectors can be systemic, such as by intravenous or intramuscular administration, by administration to target cells ex-planted from the patient followed by reintroduction into the patient, or by any other means that would allow for introduction into the desired target cell. Antisense DNA can be expressed endogenously via the use of a single stranded DNA intracellular expression vector.

By RNA is meant a molecule comprising at least one ribonucleotide residue. By "ribonucleotide" is meant a nucleotide with a hydroxyl group at the 2' position of a β -D-ribo-furanose moiety.

By "vectors" is meant any nucleic acid- and/or viral-based technique used to deliver a desired nucleic acid.

By "patient" is meant an organism, which is a donor or recipient of explanted cells or the cells themselves. "Patient" also refers to an organism to which the nucleic acid molecules of the invention can be administered. Preferably, a patient is a mammal or mammalian cells. More preferably, a patient is a human or human cells.

The nucleic acid molecules of the instant invention, individually, or in combination or in conjunction with other drugs, can be used to treat diseases or conditions discussed above. For example, to treat a disease or condition associated with the levels of CLCA1, the patient may be treated, or other appropriate cells may be treated, as is evident to those skilled in the art, individually or in combination with one or more drugs under conditions suitable for the treatment.

In a further embodiment, the described molecules, such as antisense or ribozymes, can be used in combination with other known treatments to treat conditions or diseases discussed above. For example, the described molecules could

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be used in combination with one or more known therapeutic agents to treat Chronic Obstructive Pulmonary Diseases (COPDs), chronic bronchitis, asthma, cystic fibrosis, obstructive bowel syndrome, and/or other disease states or conditions which respond to the modulation of CLCA1 expression.

In another preferred embodiment, the invention features nucleic acid-based inhibitors (e.g., enzymatic nucleic acid molecules (ribozymes), antisense nucleic acids, 2-5A antisense chimeras, triplex DNA, antisense nucleic acids containing RNA cleaving chemical groups) and methods for their use to down regulate or inhibit the expression of genes (e.g., CLCA1) capable of progression and/or maintenance of Chronic Obstructive Pulmonary Diseases (COPDs), chronic bronchitis, asthma, cystic fibrosis, obstructive bowel syndrome, and/or other disease states or conditions which respond to the modulation of CLCA1 expression.

By "comprising" is meant including, but not limited to, whatever follows the word "comprising". Thus, use of the term "comprising" indicates that the listed elements are required or mandatory, but that other elements are optional and may or may not be present. By "consisting of" is meant including, and limited to, whatever follows the phrase "consisting of". Thus, the phrase "consisting of" indicates that the listed elements are required or mandatory, and that no other elements may be present. By "consisting essentially of" is meant including any elements listed after the phrase, and limited to other elements that do not interfere with or contribute to the activity or action specified in the disclosure for the listed elements. Thus, the phrase "consisting essentially of" indicates that the listed elements are required or mandatory, but that other elements are optional and may or may not be present depending upon whether or not they affect the activity or action of the listed elements.

The foregoing description of the various aspects and embodiments is provided with reference to the exemplary calcium activated chloride channel gene CLCA1, which is also referred to as CaCC1 or ICACC-1. However, the various aspects and embodiments are also directed to other genes which express CLCA1 or CaCC1-like proteins (for example hCLCA2, hCLCA3, hCLCA4, CaCC2, and CaCC3). Those additional genes can be analyzed for target sites using the methods described for CLCA1. Thus, the inhibition and the effects of such inhibition of the other genes can be performed as described herein.

Other features and advantages of the invention will be apparent from the following description of the preferred embodiments thereof, and from the claims.

Description Of The Preferred Embodiments

First the drawings will be described briefly.

Drawings

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Figure 1 shows examples of chemically stabilized ribozyme motifs. HH Rz, represents hammerhead ribozyme motif (Usman et al., 1996, Curr. Op. Struct. Bio., 1, 527); NCH Rz represents the NCH ribozyme motif (Ludwig & Sproat, International PCT Publication No. WO 98/58058); G-Cleaver, represents G-cleaver ribozyme motif (Kore et al., 1998, Nucleic Acids Research 26, 4116-4120). N or n, represent independently a nucleotide which may be same or different and have complementarity to each other; rI, represents ribo-Inosine nucleotide; arrow indicates the site of cleavage within the target. Position 4 of the HH Rz and the NCH Rz is shown as having 2'-C-allyl modification, but those skilled in the art will recognize that this position can be modified with other modifications well known in the art, so long as such modifications do not significantly inhibit the activity of the ribozyme.

Figure 2 shows an example of the Amberzyme ribozyme motif that is chemically stabilized (see, for example, Beigelman *et al.*, International PCT publication No. WO 99/55857, incorporated by reference herein; also referred to as Class I Motif). The Amberzyme motif is a class of enzymatic nucleic molecules that do not require the presence of a ribonucleotide (2'-OH) group for its activity.

Figure 3 shows an example of the Zinzyme A ribozyme motif that is chemically stabilized (Beigelman *et al.*, International PCT publication No. WO 99/55857, incorporated by reference herein; also referred to as Class A or Class II Motif). The Zinzyme motif is a class of enzymatic nucleic molecules that do not require the presence of a ribonucleotide (2'-OH) group for its activity.

Figure 4 shows an example of a DNAzyme motif described by Santoro *et al.*, 1997, *PNAS*, 94, 4262.

Figures 5A and 5B are diagrammatic schemes representative of the process used for Target Discovery in the instant invention. The process for Target Discovery is described in Jarvis *et al.*, International PCT publication No. WO 98/50530, incorporated by reference herein in its entirety including the Figures.

Mechanism of action of Nucleic Acid Molecules of the Invention

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Antisense: Antisense molecules may be modified or unmodified RNA, DNA, or mixed polymer oligonucleotides which primarily function by specifically binding to matching sequences resulting in inhibition of peptide synthesis (Wu-Pong, Nov 1994, *BioPharm*, 20-33). The antisense oligonucleotide binds to target RNA by Watson Crick base-pairing and blocks gene expression by preventing ribosomal translation of the bound sequences either by steric blocking or by activating RNase H enzyme. Antisense molecules can also alter protein synthesis by interfering with RNA processing or transport from the nucleus into the cytoplasm (Mukhopadhyay & Roth, 1996, *Crit. Rev. in Oncogenesis* 7, 151-190).

In addition, binding of single stranded DNA to RNA may result in nuclease degradation of the heteroduplex (Wu-Pong, *supra*; Crooke, *supra*). To date, the only backbone modified DNA chemistry which will act as substrates for RNase H are phosphorothioates, phosphorodithioates, and borontrifluoridates. Recently it has been reported that 2'-arabino and 2'-fluoro arabino- containing oligos can also activate RNase H activity.

A number of antisense molecules have been described that utilize novel configurations of chemically modified nucleotides, secondary structure, and/or RNase H substrate domains (Woolf *et al.*, International PCT Publication No. WO 98/13526; Thompson *et al.*, International PCT Publication No. WO 99/54459; Hartmann *et al.*, USSN 60/101,174 which was filed on September 21, 1998) all of these are incorporated by reference herein in their entirety.

In addition, antisense deoxyoligoribonucleotides can be used to target RNA by means of DNA-RNA interactions, thereby activating RNase H, which digests the target RNA in the duplex. Antisense DNA can be expressed endogenously *in vivo* via the use of a single stranded DNA intracellular expression vector or equivalents and variations thereof.

<u>Triplex Forming Oligonucleotides (TFO)</u>: Single stranded DNA may be designed to bind to genomic DNA in a sequence specific manner. TFOs are comprised of pyrimidine-rich oligonucleotides which bind DNA helices through Hoogsteen Base-pairing (Wu-Pong, *supra*). The resulting triple helix composed of the DNA sense, DNA antisense, and TFO disrupts RNA synthesis by RNA polymerase. The TFO mechanism may result in gene expression or cell death since binding may be irreversible (Mukhopadhyay & Roth, *supra*).

2-5A Antisense Chimera: The 2-5A system is an interferon mediated mechanism for RNA degradation found in higher vertebrates (Mitra et al., 1996,

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Proc Nat Acad Sci USA 93, 6780-6785). Two types of enzymes, 2-5A synthetase and RNase L, are required for RNA cleavage. The 2-5A synthetases require double stranded RNA to form 2'-5' oligoadenylates (2-5A). 2-5A then acts as an allosteric effector for utilizing RNase L which has the ability to cleave single stranded RNA. The ability to form 2-5A structures with double stranded RNA makes this system particularly useful for inhibition of viral replication.

(2'-5') oligoadenylate structures may be covalently linked to antisense molecules to form chimeric oligonucleotides capable of RNA cleavage (Torrence, *supra*). These molecules putatively bind and activate a 2-5A dependent RNase, the oligonucleotide/enzyme complex then binds to a target RNA molecule which can then be cleaved by the RNase enzyme.

Seven basic varieties of naturally occurring Enzymatic Nucleic Acid: In addition, several in vitro selection enzymatic RNAs are presently known. (evolution) strategies (Orgel, 1979, Proc. R. Soc. London, B 205, 435) have been used to evolve new nucleic acid catalysts capable of catalyzing cleavage and ligation of phosphodiester linkages (Joyce, 1989, Gene, 82, 83-87; Beaudry et al., 1992, Science 257, 635-641; Joyce, 1992, Scientific American 267, 90-97; Breaker et al., 1994, TIBTECH 12, 268; Bartel et al., 1993, Science 261:1411-1418; Szostak, 1993, TIBS 17, 89-93; Kumar et al., 1995, FASEB J., 9, 1183; Breaker, 1996, Curr. Op. Biotech., 7, 442; Santoro et al., 1997, Proc. Natl. Acad. Sci., 94, 4262; Tang et al., 1997, RNA 3, 914; Nakamaye & Eckstein, 1994, supra; Long & Uhlenbeck, 1994, supra; Ishizaka et al., 1995, supra; Vaish et al., 1997, Biochemistry 36, 6495; all of these are incorporated by reference herein). Each can catalyze a series of reactions including the hydrolysis of phosphodiester bonds in trans (and thus can cleave other RNA molecules) under physiological conditions.

Nucleic acid molecules of this invention will block to some extent CLCA1 protein expression and can be used to treat disease or diagnose disease associated with the levels of CLCA1.

The enzymatic nature of a ribozyme has significant advantages, such as the concentration of ribozyme necessary to affect a therapeutic treatment is lower. This advantage reflects the ability of the ribozyme to act enzymatically. Thus, a single ribozyme molecule is able to cleave many molecules of target RNA. In addition, the ribozyme is a highly specific inhibitor, with the specificity of inhibition depending not only on the base-pairing mechanism of binding to the target RNA, but also on the mechanism of target RNA cleavage. Single mismatches, or base-substitutions,

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near the site of cleavage can be chosen to completely eliminate catalytic activity of a ribozyme.

Nucleic acid molecules having an endonuclease enzymatic activity are able to repeatedly cleave other separate RNA molecules in a nucleotide base sequence-specific manner. Such enzymatic nucleic acid molecules can be targeted to virtually any RNA transcript, and achieve efficient cleavage *in vitro* (Zaug *et al.*, 324, *Nature* 429 1986; Uhlenbeck, 1987 *Nature* 328, 596; Kim *et al.*, 84 *Proc. Natl. Acad. Sci. USA* 8788, 1987; Dreyfus, 1988, *Einstein Quart. J. Bio. Med.*, 6, 92; Haseloff and Gerlach, 334 *Nature* 585, 1988; Cech, 260 *JAMA* 3030, 1988; and Jefferies *et al.*, 17 *Nucleic Acids Research* 1371, 1989; Santoro *et al.*, 1997 *supra*).

Because of their sequence specificity, trans-cleaving ribozymes show promise as therapeutic agents for human disease (Usman and McSwiggen, 1995 Ann. Rep. Med. Chem. 30, 285-294; Christoffersen and Marr, 1995 J. Med. Chem. 38, 2023-2037). Ribozymes can be designed to cleave specific RNA targets within the background of cellular RNA. Such a cleavage event renders the RNA non-functional and abrogates protein expression from that RNA. In this manner, synthesis of a protein associated with a disease state can be selectively inhibited (Warashina et al., 1999, Chemistry and Biology, 6, 237-250).

The nucleic acid molecules of the instant invention are also referred to as GeneBloc reagents, which are essentially nucleic acid molecules (e.g.; ribozymes, antisense) capable of down-regulating gene expression.

GeneBlocs are modified oligonucleotides including ribozymes and modified antisense oligonucleotides that bind to and target specific mRNA molecules. Because GeneBlocs can be designed to target any specific mRNA, their potential applications are quite broad. Traditional antisense approaches have often relied heavily on the use of phosphorothioate modifications to enhance stability in biological samples, leading to a myriad of specificity problems stemming from non-specific protein binding and general cytotoxicity (Stein, 1995, *Nature Medicine*, 1, 1119). In contrast, GeneBlocs contain a number of modifications that confer nuclease resistance while making minimal use of phosphorothioate linkages, which reduces toxicity, increases binding affinity and minimizes non-specific effects compared with traditional antisense oligonucleotides. Similar reagents have recently been utilized successfully in various cell culture systems (Vassar, *et al.*, 1999, *Science*, 286, 735) and in vivo (Jarvis et al., manuscript in preparation). In addition, novel cationic lipids can be utilized to enhance cellular uptake in the presence of

serum. Since ribozymes and antisense oligonucleotides regulate gene expression at the RNA level, the ability to maintain a steady-state dose of GeneBloc over several days was important for target protein and phenotypic analysis. The advances in resistance to nuclease degradation and prolonged activity in vitro have supported the use of GeneBlocs in target validation applications.

Target sites

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Targets for useful ribozymes and antisense nucleic acids can be determined as disclosed in Draper et al., WO 93/23569; Sullivan et al., WO 93/23057; Thompson et al., WO 94/02595; Draper et al., WO 95/04818; McSwiggen et al., US Patent No. 5,525,468. All of these publications are hereby incorporated by reference herein in their totality. Other examples include the following PCT applications, which concern inactivation of expression of disease-related genes: WO 95/23225, WO 95/13380, WO 94/02595, all of which are incorporated by reference herein. Rather than repeat the guidance provided in those documents here, specific examples of such methods are provided herein, not limiting to those in the art. Ribozymes and antisense to such targets are designed as described in those applications and synthesized to be tested in vitro and in vivo, as also described. The sequences of human CLCA1 RNAs were screened for optimal enzymatic nucleic acid and antisense target sites using a computer-folding algorithm. Antisense, hammerhead, DNAzyme, NCH, amberzyme, zinzyme, or G-Cleaver ribozyme binding/cleavage sites were identified. These sites are shown in Tables III to IX (all sequences are 5' to 3' in the tables; the underlined region can be any base-paired sequence, the actual sequence is not relevant here). The nucleotide base position is noted in the Tables as that site to be cleaved by the designated type of enzymatic nucleic acid molecule. While human sequences can be screened and enzymatic nucleic acid molecule and/or antisense thereafter designed, as discussed in Stinchcomb et al., WO 95/23225, mouse targeted ribozymes may be useful to test efficacy of action of the enzymatic nucleic acid molecule and/or antisense prior to testing in humans.

Antisense, hammerhead, DNAzyme, NCH, amberzyme, zinzyme or G-Cleaver ribozyme binding/cleavage sites were identified. The nucleic acid molecules are individually analyzed by computer folding (Jaeger et al., 1989 Proc. Natl. Acad. Sci. USA, 86, 7706) to assess whether the sequences fold into the appropriate secondary structure. Those nucleic acid molecules with unfavorable intramolecular interactions such as between the binding arms and the catalytic core are eliminated from consideration. Varying binding arm lengths can be chosen to optimize activity.

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Antisense, hammerhead, DNAzyme, NCH, amberzyme, zinzyme or G-Cleaver ribozyme binding/cleavage sites were identified and were designed to anneal to various sites in the RNA target. The binding arms are complementary to the target site sequences described above. The nucleic acid molecules were chemically synthesized. The method of synthesis used follows the procedure for normal DNA/RNA synthesis as described below and in Usman et al., 1987 J. Am. Chem. Soc., 109, 7845; Scaringe et al., 1990 Nucleic Acids Res., 18, 5433; Wincott et al., 1995 Nucleic Acids Res. 23, 2677-2684; and Caruthers et al., 1992, Methods in Enzymology 211,3-19.

10 Synthesis of Nucleic acid Molecules

Synthesis of nucleic acids greater than 100 nucleotides in length is difficult using automated methods, and the therapeutic cost of such molecules is prohibitive. In this invention, small nucleic acid motifs ("small refers to nucleic acid motifs no more than 100 nucleotides in length, preferably no more than 80 nucleotides in length, and most preferably no more than 50 nucleotides in length; *e.g.*, antisense oligonucleotides, hammerhead or the NCH ribozymes) are preferably used for exogenous delivery. The simple structure of these molecules increases the ability of the nucleic acid to invade targeted regions of RNA structure. Exemplary molecules of the instant invention are chemically synthesized, and others can similarly be synthesized.

Oligonucleotides (e.g.; antisense GeneBlocs) are synthesized using protocols known in the art as described in Caruthers et al., 1992, Methods in Enzymology 211, 3-19, Thompson et al., International PCT Publication No. WO 99/54459, Wincott et al., 1995, Nucleic Acids Res. 23, 2677-2684, Wincott et al., 1997, Methods Mol. Bio., 74, 59, Brennan et al., 1998, Biotechnol Bioeng., 61, 33-45, and Brennan, US patent No. 6,001,311. All of these references are incorporated herein by reference. The synthesis of oligonucleotides makes use of common nucleic acid protecting and coupling groups, such as dimethoxytrityl at the 5'-end, and phosphoramidites at the 3'-end. In a non-limiting example, small scale syntheses are conducted on a 394 Applied Biosystems, Inc. synthesizer using a 0.2 µmol scale protocol with a 2.5 min coupling step for 2'-O-methylated nucleotides and a 45 sec coupling step for 2'deoxy nucleotides. Table II outlines the amounts and the contact times of the reagents used in the synthesis cycle. Alternatively, syntheses at the 0.2 µmol scale can be performed on a 96-well plate synthesizer, such as the instrument produced by Protogene (Palo Alto, CA) with minimal modification to the cycle. A 33-fold excess (60 µL of 0.11 M = 6.6 µmol) of 2'-O-methyl phosphoramidite and a 105-fold

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excess of S-ethyl tetrazole (60 μ L of 0.25 M = 15 μ mol) can be used in each coupling cycle of 2'-O-methyl residues relative to polymer-bound 5'-hydroxyl. A 22-fold excess (40 μ L of 0.11 M = 4.4 μ mol) of deoxy phosphoramidite and a 70fold excess of S-ethyl tetrazole (40 μL of 0.25 M = 10 μmol) can be used in each coupling cycle of deoxy residues relative to polymer-bound 5'-hydroxyl. Average coupling yields on the 394 Applied Biosystems, Inc. synthesizer, determined by colorimetric quantitation of the trityl fractions, are typically 97.5-99%. oligonucleotide synthesis reagents for the 394 Applied Biosystems, Inc. synthesizer include; detritylation solution is 3% TCA in methylene chloride (ABI); capping is performed with 16% N-methyl imidazole in THF (ABI) and 10% acetic anhydride/10% 2,6-lutidine in THF (ABI); and oxidation solution is 16.9 mM I2, 49 mM pyridine, 9% water in THF (PERSEPTIVETM). Burdick & Jackson Synthesis Grade acetonitrile is used directly from the reagent bottle. S-Ethyltetrazole solution (0.25 M in acetonitrile) is made up from the solid obtained from American International Chemical, Inc. Alternately, for the introduction of phosphorothioate linkages, Beaucage reagent (3H-1,2-Benzodithiol-3-one 1,1-dioxide, 0.05 M in acetonitrile) is used.

Deprotection of the antisense oligonucleotides is performed as follows: the polymer-bound trityl-on oligoribonucleotide is transferred to a 4 mL glass screw top vial and suspended in a solution of 40% aq. methylamine (1 mL) at 65 °C for 10 min. After cooling to -20 °C, the supernatant is removed from the polymer support. The support is washed three times with 1.0 mL of EtOH:MeCN:H2O/3:1:1, vortexed and the supernatant is then added to the first supernatant. The combined supernatants, containing the oligoribonucleotide, are dried to a white powder.

The method of synthesis used for normal RNA including certain enzymatic nucleic acid molecules follows the procedure as described in Usman *et al.*, 1987, *J. Am. Chem. Soc.*, 109, 7845; Scaringe *et al.*, 1990, *Nucleic Acids Res.*, 18, 5433; Wincott *et al.*, 1995, *Nucleic Acids Res.* 23, 2677-2684 and Wincott *et al.*, 1997, *Methods Mol. Bio.*, 74, 59, and makes use of common nucleic acid protecting and coupling groups, such as dimethoxytrityl at the 5'-end, and phosphoramidites at the 3'-end. In a non-limiting example, small scale syntheses are conducted on a 394 Applied Biosystems, Inc. synthesizer using a 0.2 μmol scale protocol with a 7.5 min coupling step for alkylsilyl protected nucleotides and a 2.5 min coupling step for 2'-O-methylated nucleotides. **Table II** outlines the amounts and the contact times of the reagents used in the synthesis cycle. Alternatively, syntheses at the 0.2 μmol scale can be done on a 96-well plate synthesizer, such as the instrument produced by Protogene (Palo Alto, CA) with minimal modification to the cycle. A 33-fold excess

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(60 μ L of 0.11 M = 6.6 μ mol) of 2'-O-methyl phosphoramidite and a 75-fold excess of S-ethyl tetrazole (60 μ L of 0.25 M = 15 μ mol) can be used in each coupling cycle of 2'-O-methyl residues relative to polymer-bound 5'-hydroxyl. A 66-fold excess (120 μ L of 0.11 M = 13.2 μ mol) of alkylsilyl (ribo) protected phosphoramidite and a 150-fold excess of S-ethyl tetrazole (120 μ L of 0.25 M = 30 μ mol) can be used in each coupling cycle of ribo residues relative to polymer-bound 5'-hydroxyl. Average coupling yields on the 394 Applied Biosystems, Inc. synthesizer, determined by colorimetric quantitation of the trityl fractions, are typically 97.5-99%. Other oligonucleotide synthesis reagents for the 394 Applied Biosystems, Inc. synthesizer include; detritylation solution is 3% TCA in methylene chloride (ABI); capping is performed with 16% N-methyl imidazole in THF (ABI) and 10% acetic anhydride/10% 2,6-lutidine in THF (ABI); oxidation solution is 16.9 mM I2, 49 mM pyridine, 9% water in THF (PERSEPTIVETM). Burdick & Jackson Synthesis Grade acetonitrile is used directly from the reagent bottle. S-Ethyltetrazole solution (0.25 M in acetonitrile) is made up from the solid obtained from American International Chemical, Inc. Alternately, for the introduction of phosphorothioate linkages, Beaucage reagent (3H-1,2-Benzodithiol-3-one 1,1-dioxide0.05 M in acetonitrile) is used.

Deprotection of the RNA is performed using either a two-pot or one-pot protocol. For the two-pot protocol, the polymer-bound trityl-on oligoribonucleotide is transferred to a 4 mL glass screw top vial and suspended in a solution of 40% aq. methylamine (1 mL) at 65 °C for 10 min. After cooling to -20 °C, the supernatant is removed from the polymer support. The support is washed three times with 1.0 mL of EtOH:MeCN:H2O/3:1:1, vortexed and the supernatant is then added to the first supernatant. The combined supernatants, containing the oligoribonucleotide, are dried to a white powder. The base deprotected oligoribonucleotide is resuspended in anhydrous TEA/HF/NMP solution (300 μ L of a solution of 1.5 mL N-methylpyrrolidinone, 750 μ L TEA and 1 mL TEA•3HF to provide a 1.4 M HF concentration) and heated to 65 °C. After 1.5 h, the oligomer is quenched with 1.5 M NH₄HCO₃.

Alternatively, for the one-pot protocol, the polymer-bound trityl-on oligoribonucleotide is transferred to a 4 mL glass screw top vial and suspended in a solution of 33% ethanolic methylamine/DMSO: 1/1 (0.8 mL) at 65 °C for 15 min. The vial is brought to r.t. TEA•3HF (0.1 mL) is added and the vial is heated at 65 °C for 15 min. The sample is cooled at -20 °C and then quenched with 1.5 M NH₄HCO₃.

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For purification of the trityl-on oligomers, the quenched NH₄HCO₃ solution is loaded onto a C-18 containing cartridge that had been prewashed with acetonitrile followed by 50 mM TEAA. After washing the loaded cartridge with water, the RNA is detritylated with 0.5% TFA for 13 min. The cartridge is then washed again with water, salt exchanged with 1 M NaCl and washed with water again. The oligonucleotide is then eluted with 30% acetonitrile.

Inactive hammerhead ribozymes or binding attenuated control (BAC) oligonucleotides) are synthesized by substituting a U for G5 and a U for A14 (numbering from Hertel, K. J., et al., 1992, Nucleic Acids Res., 20, 3252). Similarly, one or more nucleotide substitutions can be introduced in other enzymatic nucleic acid molecules to inactivate the molecule and such molecules can serve as a negative control.

The average stepwise coupling yields are typically >98% (Wincott *et al.*, 1995 *Nucleic Acids Res.* 23, 2677-2684). Those of ordinary skill in the art will recognize that the scale of synthesis can be adapted to be larger or smaller than the examples described above including but not limited to 96-well format, all that is important is the ratio of chemicals used in the reaction.

Alternatively, the nucleic acid molecules of the present invention can be synthesized separately and joined together post-synthetically, for example by ligation (Moore et al., 1992, Science 256, 9923; Draper et al., International PCT publication No. WO 93/23569; Shabarova et al., 1991, Nucleic Acids Research 19, 4247; Bellon et al., 1997, Nucleosides & Nucleotides, 16, 951; Bellon et al., 1997, Bioconjugate Chem. 8, 204).

The nucleic acid molecules of the present invention are modified extensively to enhance stability by modification with nuclease resistant groups, for example, 2'-amino, 2'-C-allyl, 2'-flouro, 2'-O-methyl, 2'-H (for a review see Usman and Cedergren, 1992, TIBS 17, 34; Usman et al., 1994, Nucleic Acids Symp. Ser. 31, 163). Ribozymes are purified by gel electrophoresis using general methods or are purified by high pressure liquid chromatography (HPLC; See Wincott et al., supra, the totality of which is hereby incorporated herein by reference) and are resuspended in water.

The sequences of the ribozymes and antisense constructs that are chemically synthesized, useful in this study, are shown in **Tables III to IX**. Those in the art will recognize that these sequences are representative only of many more such sequences where the enzymatic portion of the ribozyme (all but the binding arms) is

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altered to affect activity. The ribozyme and antisense construct sequences listed in **Tables III to IX** may be formed of ribonucleotides or other nucleotides or non-nucleotides. Such ribozymes with enzymatic activity are equivalent to the ribozymes described specifically in the Tables.

5 Optimizing Activity of the nucleic acid molecule of the invention.

Chemically synthesizing nucleic acid molecules with modifications (base, sugar and/or phosphate) that prevent their degradation by serum ribonucleases may increase their potency (see e.g., Eckstein et al., International Publication No. WO 92/07065; Perrault et al., 1990 Nature 344, 565; Pieken et al., 1991, Science 253, 314; Usman and Cedergren, 1992, Trends in Biochem. Sci. 17, 334; Usman et al., International Publication No. WO 93/15187; Rossi et al., International Publication No. WO 91/03162; Sproat, US Patent No. 5,334,711; and Burgin et al., supra; all of these describe various chemical modifications that can be made to the base, phosphate and/or sugar moieties of the nucleic acid molecules described herein. All these references are incorporated by reference herein. Modifications which enhance their efficacy in cells, and removal of bases from nucleic acid molecules to shorten oligonucleotide synthesis times and reduce chemical requirements are desired.

There are several examples in the art describing sugar, base and phosphate modifications that can be introduced into nucleic acid molecules with significant 20 enhancement in their nuclease stability and efficacy. For example, oligonucleotides are modified to enhance stability and/or enhance biological activity by modification with nuclease resistant groups, for example, 2'-amino, 2'-C-allyl, 2'-flouro, 2'-Omethyl, 2'-H, nucleotide base modifications (for a review see Usman and Cedergren, 1992, TIBS. 17, 34; Usman et al., 1994, Nucleic Acids Symp. Ser. 31, 163; Burgin et 25 al., 1996, Biochemistry, 35, 14090). Sugar modifications of nucleic acid molecules have been extensively described in the art (see Eckstein et al., International Publication PCT No. WO 92/07065; Perrault et al. Nature, 1990, 344, 565-568; Pieken et al. Science, 1991, 253, 314-317; Usman and Cedergren, Trends in Biochem. Sci., 1992, 17, 334-339; Usman et al. International Publication PCT No. 30 WO 93/15187; Sproat, US Patent No. 5,334,711 and Beigelman et al., 1995, J. Biol. Chem., 270, 25702; Beigelman et al., International PCT publication No. WO 97/26270; Beigelman et al., US Patent No. 5,716,824; Usman et al., US patent No. 5,627,053; Woolf et al., International PCT Publication No. WO 98/13526; Thompson et al., USSN 60/082,404 which was filed on April 20, 1998; Karpeisky et 35 al., 1998, Tetrahedron Lett., 39, 1131; Earnshaw and Gait, 1998, Biopolymers (Nucleic acid Sciences), 48, 39-55; Verma and Eckstein, 1998, Annu. Rev. Biochem.,

67, 99-134; and Burlina et al., 1997, Bioorg. Med. Chem., 5, 1999-2010; all of the references are hereby incorporated by reference herein in their totalities). Such publications describe general methods and strategies to determine the location of incorporation of sugar, base and/or phosphate modifications and the like into ribozymes without inhibiting catalysis. In view of such teachings, similar modifications can be used as described herein to modify the nucleic acid molecules of the instant invention.

While chemical modification of oligonucleotide internucleotide linkages with phosphorothioate, phosphorothioate, and/or 5'-methylphosphonate linkages improves stability, too many of these modifications may cause some toxicity. Therefore when designing nucleic acid molecules the amount of these internucleotide linkages should be minimized. The reduction in the concentration of these linkages should lower toxicity resulting in increased efficacy and higher specificity of these molecules.

Nucleic acid molecules having chemical modifications which maintain or enhance activity are provided. Such nucleic acid is also generally more resistant to nucleases than unmodified nucleic acid. Thus, in a cell and/or *in vivo* the activity may not be significantly lowered. Therapeutic nucleic acid molecules delivered exogenously must optimally be stable within cells until translation of the target RNA has been inhibited long enough to reduce the levels of the undesirable protein. This period of time varies between hours to days depending upon the disease state. Clearly, nucleic acid molecules must be resistant to nucleases in order to function as effective intracellular therapeutic agents. Improvements in the chemical synthesis of RNA and DNA (Wincott *et al.*, 1995 *Nucleic Acids Res.* 23, 2677; Caruthers *et al.*, 1992, *Methods in Enzymology* 211,3-19 (incorporated by reference herein) have expanded the ability to modify nucleic acid molecules by introducing nucleotide modifications to enhance their nuclease stability as described above.

Use of these the nucleic acid-based molecules of the invention will lead to better treatment of the disease progression by affording the possibility of combination therapies (e.g., multiple antisense or enzymatic nucleic acid molecules targeted to different genes, nucleic acid molecules coupled with known small molecule inhibitors, or intermittent treatment with combinations of molecules (including different motifs) and/or other chemical or biological molecules). The treatment of patients with nucleic acid molecules may also include combinations of different types of nucleic acid molecules.

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Therapeutic nucleic acid molecules (e.g., enzymatic nucleic acid molecules and antisense nucleic acid molecules) delivered exogenously must optimally be stable within cells until translation of the target RNA has been inhibited long enough to reduce the levels of the undesirable protein. This period of time varies between hours to days depending upon the disease state. Clearly, these nucleic acid molecules must be resistant to nucleases in order to function as effective intracellular therapeutic agents. Improvements in the chemical synthesis of nucleic acid molecules described in the instant invention and in the art have expanded the ability to modify nucleic acid molecules by introducing nucleotide modifications to enhance their nuclease stability as described above.

By "enhanced enzymatic activity" is meant to include activity measured in cells and/or *in vivo* where the activity is a reflection of both catalytic activity and ribozyme stability. In this invention, the product of these properties is increased or not significantly (less than 10-fold) decreased *in vivo* compared to an all RNA ribozyme or all DNA enzyme.

In yet another preferred embodiment, nucleic acid catalysts having chemical modifications which maintain or enhance enzymatic activity are provided. Such nucleic acid is also generally more resistant to nucleases than unmodified nucleic acid. Thus, in a cell and/or *in vivo* the activity may not be significantly lowered. As exemplified herein such ribozymes are useful in a cell and/or *in vivo* even if activity over all is reduced 10 fold (Burgin *et al.*, 1996, *Biochemistry*, 35, 14090). Such ribozymes herein are said to "maintain" the enzymatic activity of an all RNA ribozyme.

In another aspect the nucleic acid molecules comprise a 5' and/or a 3'- cap structure.

By "cap structure" is meant chemical modifications, which have been incorporated at either terminus of the oligonucleotide (see, for example, Wincott *et al.*, WO 97/26270, incorporated by reference herein). These terminal modifications protect the nucleic acid molecule from exonuclease degradation, and may help in delivery and/or localization within a cell. The cap may be present at the 5'-terminus (5'-cap) or at the 3'-terminus (3'-cap) or may be present on both termini. In non-limiting examples the 5'-cap is selected from the group comprising inverted abasic residue (moiety), 4',5'-methylene nucleotide; 1-(beta-D-erythrofuranosyl) nucleotide, 4'-thio nucleotide, carbocyclic nucleotide; 1,5-anhydrohexitol nucleotide; L-nucleotides; alpha-nucleotides; modified base nucleotide; phosphorodithioate

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linkage; threo-pentofuranosyl nucleotide; acyclic 3',4'-seco nucleotide; acyclic 3,4dihydroxybutyl nucleotide; acyclic 3,5-dihydroxypentyl nucleotide, 3'-3'-inverted nucleotide moiety; 3'-3'-inverted abasic moiety; 3'-2'-inverted nucleotide moiety; 3'abasic moiety; 1,4-butanediol phosphate; 3'-phosphoramidate; 2'-inverted 3'-phosphate; 3'-phosphorothioate; hexylphosphate; aminohexyl phosphate; phosphorodithioate; or bridging or non-bridging methylphosphonate moiety (for more details see Wincott et al., International PCT publication No. WO 97/26270, incorporated by reference herein).

In yet another preferred embodiment, the 3'-cap is selected from a group comprising, 4',5'-methylene nucleotide; 1-(beta-D-erythrofuranosyl) nucleotide; 4'thio nucleotide, carbocyclic nucleotide; 5'-amino-alkyl phosphate; 1,3-diamino-2propyl phosphate, 3-aminopropyl phosphate; 6-aminohexyl phosphate; 1,2aminododecyl phosphate; hydroxypropyl phosphate; 1,5-anhydrohexitol nucleotide; L-nucleotide; alpha-nucleotide; modified base nucleotide; phosphorodithioate; threo-pentofuranosyl nucleotide; acyclic 3',4'-seco nucleotide; 3,4-dihydroxybutyl nucleotide; 3,5-dihydroxypentyl nucleotide, 5'-5'-inverted nucleotide moiety; 5'-5'inverted abasic moiety; 5'-phosphoramidate; 5'-phosphorothioate; 1,4-butanediol non-bridging 5'-phosphoramidate, 5'-amino; bridging and/or phosphate; and/or phosphorodithioate, bridging or non bridging phosphorothioate methylphosphonate and 5'-mercapto moieties (for more details, see Beaucage and Iyer, 1993, Tetrahedron 49, 1925; incorporated by reference herein).

By the term "non-nucleotide" is meant any group or compound which can be incorporated into a nucleic acid chain in the place of one or more nucleotide units, including either sugar and/or phosphate substitutions, and allows the remaining bases to exhibit their enzymatic activity. The group or compound is abasic in that it does not contain a commonly recognized nucleotide base, such as adenosine, guanine, cytosine, uracil or thymine.

An "alkyl" group refers to a saturated aliphatic hydrocarbon, including straight-chain, branched-chain, and cyclic alkyl groups. Preferably, the alkyl group has 1 to 12 carbons. More preferably it is a lower alkyl of from 1 to 7 carbons, more preferably 1 to 4 carbons. The alkyl group may be substituted or unsubstituted. When substituted the substituted group(s) is preferably, hydroxyl, cyano, alkoxy, =O, =S, NO2 or N(CH3)2, amino, or SH. The term also includes alkenyl groups which are unsaturated hydrocarbon groups containing at least one carbon-carbon double bond, including straight-chain, branched-chain, and cyclic groups. Preferably, the alkenyl group has 1 to 12 carbons. More preferably it is a lower

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alkenyl of from 1 to 7 carbons, more preferably 1 to 4 carbons. The alkenyl group may be substituted or unsubstituted. When substituted the substituted group(s) is preferably, hydroxyl, cyano, alkoxy, =O, =S, NO₂, halogen, N(CH₃)₂, amino, or SH. The term "alkyl" also includes alkynyl groups which have an unsaturated hydrocarbon group containing at least one carbon-carbon triple bond, including straight-chain, branched-chain, and cyclic groups. Preferably, the alkynyl group has 1 to 12 carbons. More preferably it is a lower alkynyl of from 1 to 7 carbons, more preferably 1 to 4 carbons. The alkynyl group may be substituted or unsubstituted. When substituted the substituted group(s) is preferably, hydroxyl, cyano, alkoxy, =O, =S, NO₂ or N(CH₃)₂, amino or SH.

Such alkyl groups may also include aryl, alkylaryl, carbocyclic aryl, heterocyclic aryl, amide and ester groups. An "aryl" group refers to an aromatic group which has at least one ring having a conjugated π electron system and includes carbocyclic aryl, heterocyclic aryl and biaryl groups, all of which may be optionally substituted. The preferred substituent(s) of aryl groups are halogen, trihalomethyl, hydroxyl, SH, OH, cyano, alkoxy, alkyl, alkenyl, alkynyl, and amino groups. An "alkylaryl" group refers to an alkyl group (as described above) covalently joined to an aryl group (as described above). Carbocyclic aryl groups are groups wherein the ring atoms on the aromatic ring are all carbon atoms. The carbon atoms are optionally substituted. Heterocyclic aryl groups are groups having from 1 to 3 heteroatoms as ring atoms in the aromatic ring and the remainder of the ring atoms are carbon atoms. Suitable heteroatoms include oxygen, sulfur, and nitrogen, and include furanyl, thienyl, pyridyl, pyrrolyl, N-lower alkyl pyrrolo, pyrimidyl, pyrazinyl, imidazolyl and the like, all optionally substituted. An "amide" refers to an -C(O)-NH-R, where R is either alkyl, aryl, alkylaryl or hydrogen. An "ester" refers to an -C(O)-OR', where R is either alkyl, aryl, alkylaryl or hydrogen.

By "nucleotide" as used herein is as recognized in the art to include natural bases (standard), and modified bases well known in the art. Such bases are generally located at the 1' position of a nucleotide sugar moiety. Nucleotides generally comprise a base, sugar and a phosphate group. The nucleotides can be unmodified or modified at the sugar, phosphate and/or base moiety, (also referred to interchangeably as nucleotide analogs, modified nucleotides, non-natural nucleotides, non-standard nucleotides and other; see for example, Usman and McSwiggen, *supra*; Eckstein *et al.*, International PCT Publication No. WO 92/07065; Usman *et al.*, International PCT Publication No. WO 93/15187; Uhlmann & Peyman, 1990, *Chemical Reviews*, 90, 4, 544-579, all are hereby incorporated by reference herein). There are several examples of modified nucleic acid bases known

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in the art as summarized by Limbach *et al.*, 1994, *Nucleic Acids Res.* 22, 2183. Some of the non-limiting examples of base modifications that can be introduced into nucleic acid molecules include, inosine, purine, pyridin-4-one, pyridin-2-one, phenyl, pseudouracil, 2, 4, 6-trimethoxy benzene, 3-methyl uracil, dihydrouridine, naphthyl, aminophenyl, 5-alkylcytidines (*e.g.*, 5-methylcytidine), 5-alkyluridines (*e.g.*, ribothymidine), 5-halouridine (*e.g.*, 5-bromouridine) or 6-azapyrimidines or 6-alkylpyrimidines (*e.g.* 6-methyluridine), propyne, and others (Burgin *et al.*, 1996, *Biochemistry*, 35, 14090; Uhlman & Peyman, *supra*). By "modified bases" in this aspect is meant nucleotide bases other than adenine, guanine, cytosine and uracil at 1' position or their equivalents; such bases may be used at any position, for example, within the catalytic core of an enzymatic nucleic acid molecule and/or in the substrate-binding regions of the nucleic acid molecule.

In a preferred embodiment, the invention features modified ribozymes with phosphate backbone modifications comprising one or more phosphorothioate, phosphorodithioate, methylphosphonate, morpholino, amidate carbamate, carboxymethyl, acetamidate, polyamide, sulfonate, sulfonamide, sulfamate, formacetal, thioformacetal, and/or alkylsilyl, substitutions. For a review of oligonucleotide backbone modifications see Hunziker and Leumann, 1995, *Nucleic Acid Analogues: Synthesis and Properties*, in *Modern Synthetic Methods*, VCH, 331-417, and Mesmaeker *et al.*, 1994, *Novel Backbone Replacements for Oligonucleotides*, in *Carbohydrate Modifications in Antisense Research*, ACS, 24-39. These references are hereby incorporated by reference herein.

By "abasic" is meant sugar moieties lacking a base or having other chemical groups in place of a base at the 1' position, (for more details, see Wincott *et al.*, International PCT publication No. WO 97/26270).

By "unmodified nucleoside" is meant one of the bases adenine, cytosine, guanine, thymine, uracil joined to the 1' carbon of β -D-ribo-furanose.

By "modified nucleoside" is meant any nucleotide base which contains a modification in the chemical structure of an unmodified nucleotide base, sugar and/or phosphate.

In connection with 2'-modified nucleotides as described for the present invention, by "amino" is meant 2'-NH₂ or 2'-O- NH₂, which may be modified or unmodified. Such modified groups are described, for example, in Eckstein *et al.*, U.S. Patent 5,672,695 and Matulic-Adamic *et al.*, WO 98/28317, respectively, which are both incorporated by reference herein in their entireties.

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Various modifications to nucleic acid (e.g., antisense and ribozyme) structure can be made to enhance the utility of these molecules. Such modifications will enhance shelf-life, half-life *in vitro*, stability, and ease of introduction of such oligonucleotides to the target site, e.g., to enhance penetration of cellular membranes, and confer the ability to recognize and bind to targeted cells.

Use of these molecules will lead to better treatment of the disease progression by affording the possibility of combination therapies (e.g., multiple ribozymes targeted to different genes, ribozymes coupled with known small molecule inhibitors, or intermittent treatment with combinations of ribozymes (including different ribozyme motifs) and/or other chemical or biological molecules). The treatment of patients with nucleic acid molecules may also include combinations of different types of nucleic acid molecules. Therapies may be devised which include a mixture of ribozymes (including different ribozyme motifs), antisense and/or 2-5A chimera molecules to one or more targets to alleviate symptoms of a disease.

Administration of Nucleic Acid Molecules

Methods for the delivery of nucleic acid molecules are described in Akhtar et al., 1992, Trends Cell Bio., 2, 139; and Delivery Strategies for Antisense Oligonucleotide Therapeutics, ed. Akhtar, 1995 which are both incorporated herein by reference. Sullivan et al., PCT WO 94/02595, further describes the general methods for delivery of enzymatic RNA molecules. These protocols may be utilized for the delivery of virtually any nucleic acid molecule. Nucleic acid molecules may be administered to cells by a variety of methods known to those familiar to the art, including, but not restricted to, encapsulation in liposomes, by iontophoresis, or by incorporation into other vehicles, such as hydrogels, cyclodextrins, biodegradable nanocapsules, and bioadhesive microspheres. For some indications, nucleic acid molecules may be directly delivered ex vivo to cells or tissues with or without the aforementioned vehicles. Alternatively, the nucleic acid/vehicle combination is locally delivered by direct injection or by use of a catheter, infusion pump or stent. Other routes of delivery include, but are not limited to, intravascular, intramuscular, subcutaneous or joint injection, aerosol inhalation, oral (tablet or pill form), topical, systemic, ocular, intraperitoneal and/or intrathecal delivery. More detailed descriptions of nucleic acid delivery and administration are provided in Sullivan et al., supra, Draper et al., PCT WO93/23569, Beigelman et al., PCT WO99/05094, and Klimuk et al., PCT WO99/04819 all of which have been incorporated by reference herein.

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In addition, the nucleic acid molecules of the instant invention, used to treat pulmonary diseases and disorders, may be administered directly to the lungs via pulmonary delivery. The pulmonary delivery of oligonucleotides is described by Bennett *et al.*, International PCT publication Nos. WO/9960166 and WO/9960010; Danahay *et al.*, 1999, *Pharm. Res.*, 16(10), 1542-1549; Metzger and Nyce, 1999, *J. Allergy Clin. Immunol.*, 104(2, Pt. 1), 260-266; Nicklin *et al.*, 1998, *Pharm. Res.*, 15(4), 583-591; Illum and Watts, International PCT publication No. WO/9735562; and Nyce, 1997, *Expert Opin. Invest. Drugs*, 6(9), 1149-1156.

The molecules of the instant invention can be used as pharmaceutical agents. Pharmaceutical agents prevent, inhibit the occurrence, or treat (alleviate a symptom to some extent, preferably all of the symptoms) of a disease state in a patient.

The negatively charged polynucleotides of the invention can be administered (e.g., RNA, DNA or protein) and introduced into a patient by any standard means, with or without stabilizers, buffers, and the like, to form a pharmaceutical composition. When it is desired to use a liposome delivery mechanism, standard protocols for formation of liposomes can be followed. The compositions of the present invention may also be formulated and used as tablets, capsules or elixirs for oral administration; suppositories for rectal administration; sterile solutions; suspensions for injectable administration; and other compositions known in the art.

The present invention also includes pharmaceutically acceptable formulations of the compounds described. These formulations include salts of the above compounds, *e.g.*, acid addition salts, including salts of hydrochloric, hydrobromic, acetic acid, and benzene sulfonic acid.

A pharmacological composition or formulation refers to a composition or formulation in a form suitable for administration, *e.g.*, systemic administration, into a cell or patient, preferably a human. Suitable forms, in part, depend upon the use or the route of entry, for example oral, transdermal, or by injection. Such forms should not prevent the composition or formulation from reaching a target cell (*i.e.*, a cell to which the negatively charged polymer is desired to be delivered to). For example, pharmacological compositions injected into the blood stream should be soluble. Other factors are known in the art, and include considerations such as toxicity and forms which prevent the composition or formulation from exerting its effect. By "systemic administration" is meant *in vivo* systemic absorption or accumulation of drugs in the blood stream followed by distribution throughout the entire body. Administration routes that lead to systemic absorption include, without limitations:

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intravenous, subcutaneous, intraperitoneal, inhalation, oral, intrapulmonary and intramuscular. Each of these administration routes exposes the desired negatively charged polymers, e.g., nucleic acids, to an accessible diseased tissue. The rate of entry of a drug into the circulation has been shown to be a function of molecular weight or size. The use of a liposome or other drug carrier comprising the compounds of the instant invention can potentially localize the drug, for example, in certain tissue types, such as the tissues of the reticular endothelial system (RES). A liposome formulation that can facilitate the association of drug with the surface of cells, such as, lymphocytes and macrophages is also useful. This approach may provide enhanced delivery of the drug to target cells by taking advantage of the specificity of macrophage and lymphocyte immune recognition of abnormal cells, such as cancer cells.

By pharmaceutically acceptable formulation is meant, a composition or formulation that allows for the effective distribution of the nucleic acid molecules of the instant invention in the physical location most suitable for their desired activity. Non-limiting examples of agents suitable for formulation with the nucleic acid molecules of the instant invention include: P-glycoprotein inhibitors (such as Pluronic P85) which can enhance entry of drugs into the CNS (Jolliet-Riant and Tillement, 1999, Fundam. Clin. Pharmacol., 13, 16-26); biodegradable polymers, such as poly (DL-lactide-coglycolide) microspheres for sustained release delivery after intracerebral implantation (Emerich, DF et al, 1999, Cell Transplant, 8, 47-58) Alkermes, Inc. Cambridge, MA; and loaded nanoparticles, such as those made of polybutylcyanoacrylate, which can deliver drugs across the blood brain barrier and can alter neuronal uptake mechanisms (Prog Neuropsychopharmacol Biol Psychiatry, 23, 941-949, 1999). Other non-limiting examples of delivery strategies for the nucleic acid molecules of the instant invention include material described in Boado et al., 1998, J. Pharm. Sci., 87, 1308-1315; Tyler et al., 1999, FEBS Lett., 421, 280-284; Pardridge et al., 1995, PNAS USA., 92, 5592-5596; Boado, 1995, Adv. Drug Delivery Rev., 15, 73-107; Aldrian-Herrada et al., 1998, Nucleic Acids Res., 26, 4910-4916; and Tyler et al., 1999, PNAS USA., 96, 7053-7058.

The invention also features the use of the composition comprising surface-modified liposomes containing poly (ethylene glycol) lipids (PEG-modified, or long-circulating liposomes or stealth liposomes). These formulations offer a method for increasing the accumulation of drugs in target tissues. This class of drug carriers resists opsonization and elimination by the mononuclear phagocytic system (MPS or RES), thereby enabling longer blood circulation times and enhanced tissue exposure for the encapsulated drug (Lasic *et al. Chem. Rev.* 1995, 95, 2601-2627; Ishiwata *et*

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al., Chem. Pharm. Bull. 1995, 43, 1005-1011). All incorporated by reference herein. Such liposomes have been shown to accumulate selectively in tumors, presumably by extravasation and capture in the neovascularized target tissues (Lasic et al., Science 1995, 267, 1275-1276; Oku et al., 1995, Biochim. Biophys. Acta, 1238, 86-90). All incorporated by reference herein. The long-circulating liposomes enhance the pharmacokinetics and pharmacodynamics of DNA and RNA, particularly compared to conventional cationic liposomes which are known to accumulate in tissues of the MPS (Liu et al., J. Biol. Chem. 1995, 42, 24864-24870; Choi et al., International PCT Publication No. WO 96/10391; Ansell et al., International PCT Publication No. WO 96/10392; all of which are incorporated by reference herein). Long-circulating liposomes are also likely to protect drugs from nuclease degradation to a greater extent compared to cationic liposomes, based on their ability to avoid accumulation in metabolically aggressive MPS tissues such as the liver and spleen.

In addition, the invention features the use of methods to deliver the nucleic acid molecules of the instant invention to hematopoietic cells, including monocytes and lymphocytes. These methods are described in detail by Hartmann *et al.*, 1998, *J. Phamacol. Exp. Ther.*, 285(2), 920-928; Kronenwett *et al.*, 1998, *Blood*, 91(3), 852-862; Filion and Phillips, 1997, *Biochim. Biophys. Acta.*, 1329(2), 345-356; Ma and Wei, 1996, *Leuk. Res.*, 20(11/12), 925-930; and Bongartz *et al.*, 1994, *Nucleic Acids Research*, 22(22), 4681-8. Such methods, as described above, include the use of free oligonucleotide, cationic lipid formulations, liposome formulations including pH sensitive liposomes and immunoliposomes, and bioconjugates including oligonucleotides conjugated to fusogenic peptides, for the transfection of hematopoietic cells with oligonucleotides.

The present invention also includes compositions prepared for storage or administration which include a pharmaceutically effective amount of the desired compounds in a pharmaceutically acceptable carrier or diluent. Acceptable carriers or diluents for therapeutic use are well known in the pharmaceutical art, and are described, for example, in *Remington's Pharmaceutical Sciences*, Mack Publishing Co. (A.R. Gennaro edit. 1985) hereby incorporated by reference herein. For example, preservatives, stabilizers, dyes and flavoring agents may be provided. These include sodium benzoate, sorbic acid and esters of *p*-hydroxybenzoic acid. In addition, antioxidants and suspending agents may be used.

A pharmaceutically effective dose is that dose required to prevent, inhibit the occurrence, or treat (alleviate a symptom to some extent, preferably all of the

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symptoms) of a disease state. The pharmaceutically effective dose depends on the type of disease, the composition used, the route of administration, the type of mammal being treated, the physical characteristics of the specific mammal under consideration, concurrent medication, and other factors which those skilled in the medical arts will recognize. Generally, an amount between 0.1 mg/kg and 100 mg/kg body weight/day of active ingredients is administered dependent upon potency of the negatively charged polymer.

The nucleic acid molecules of the present invention may also be administered to a patient in combination with other therapeutic compounds to increase the overall therapeutic effect. The use of multiple compounds to treat an indication may increase the beneficial effects while reducing the presence of side effects. Oxygen therapy, bronchodilators, corticosteroids, antibacterials, vaccinations, acetylcysteine, mucokinetic agents, and DNase (Pulmozyme) are non-limiting examples of compounds and/or methods that can be combined with or used in conjunction with the nucleic acid molecules (e.g. ribozymes and antisense molecules) of the instant invention. Those skilled in the art will recognize that other drug compounds and therapies can be similarly and readily combined with the nucleic acid molecules of the instant invention (e.g. ribozymes and antisense molecules) and are, therefore, within the scope of the instant invention.

20 Alternatively, certain of the nucleic acid molecules of the instant invention can be expressed within cells from eukaryotic promoters (e.g., Izant and Weintraub, 1985, Science, 229, 345; McGarry and Lindquist, 1986, Proc. Natl. Acad. Sci., USA 83, 399; Scanlon et al., 1991, Proc. Natl. Acad. Sci. USA, 88, 10591-5; Kashani-Sabet et al., 1992, Antisense Res. Dev., 2, 3-15; Dropulic et al., 1992, J. Virol., 66, 25 1432-41; Weerasinghe et al., 1991, J. Virol., 65, 5531-4; Ojwang et al., 1992, Proc. Natl. Acad. Sci. USA, 89, 10802-6; Chen et al., 1992, Nucleic Acids Res., 20, 4581-9; Sarver et al., 1990 Science, 247, 1222-1225; Thompson et al., 1995, Nucleic Acids Res., 23, 2259; Good et al., 1997, Gene Therapy, 4, 45; all of the references are hereby incorporated in their totality by reference herein). Those 30 skilled in the art realize that any nucleic acid can be expressed in eukaryotic cells from the appropriate DNA/RNA vector. The activity of such nucleic acids can be augmented by their release from the primary transcript by a ribozyme (Draper et al., PCT WO 93/23569, and Sullivan et al., PCT WO 94/02595; Ohkawa et al., 1992, Nucleic Acids Symp. Ser., 27, 15-6; Taira et al., 1991, Nucleic Acids Res., 19, 5125-35 30; Ventura et al., 1993, Nucleic Acids Res., 21, 3249-55; Chowrira et al., 1994, J. Biol. Chem., 269, 25856; all of these references are hereby incorporated in their totalities by reference herein).

In another aspect of the invention, RNA molecules of the present invention are preferably expressed from transcription units (see, for example, Couture *et al.*, 1996, *TIG.*, 12, 510) inserted into DNA or RNA vectors. The recombinant vectors are preferably DNA plasmids or viral vectors. Ribozyme expressing viral vectors could be constructed based on, but not limited to, adeno-associated virus, retrovirus, adenovirus, or alphavirus. Preferably, the recombinant vectors capable of expressing the nucleic acid molecules are delivered as described above, and persist in target cells. Alternatively, viral vectors may be used that provide for transient expression of nucleic acid molecules. Such vectors might be repeatedly administered as necessary. Once expressed, the nucleic acid molecule binds to the target mRNA. Delivery of nucleic acid molecule expressing vectors could be systemic, such as by intravenous or intra-muscular administration, by administration to target cells explanted from the patient followed by reintroduction into the patient, or by any other means that would allow for introduction into the desired target cell (for a review, see Couture *et al.*, 1996, *TIG.*, 12, 510).

In one aspect, the invention features an expression vector comprising a nucleic acid sequence encoding at least one of the nucleic acid molecules disclosed in the instant invention. The nucleic acid sequence encoding the nucleic acid molecule of the instant invention is operably linked in a manner which allows expression of that nucleic acid molecule.

In another aspect, the invention features an expression vector comprising: a) a transcription initiation region (e.g., eukaryotic pol I, II or III initiation region); b) a transcription termination region (e.g., eukaryotic pol I, II or III termination region); c) a nucleic acid sequence encoding at least one of the nucleic acid catalyst of the instant invention; and wherein said sequence is operably linked to said initiation region and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule. The vector may optionally include an open reading frame (ORF) for a protein operably linked on the 5' side or the 3'-side of the sequence encoding the nucleic acid catalyst of the invention; and/or an intron (intervening sequences).

Transcription of the nucleic acid molecule sequences are driven from a promoter for eukaryotic RNA polymerase I (pol I), RNA polymerase II (pol II), or RNA polymerase III (pol III). Transcripts from pol II or pol III promoters will be expressed at high levels in all cells; the levels of a given pol II promoter in a given cell type will depend on the nature of the gene regulatory sequences (enhancers, silencers, etc.) present nearby. Prokaryotic RNA polymerase promoters are also

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used, providing that the prokaryotic RNA polymerase enzyme is expressed in the appropriate cells (Elroy-Stein and Moss, 1990, *Proc. Natl. Acad. Sci. U S A*, 87, 6743-7; Gao and Huang 1993, *Nucleic Acids Res..*, 21, 2867-72; Lieber *et al.*, 1993, *Methods Enzymol.*, 217, 47-66; Zhou *et al.*, 1990, *Mol. Cell. Biol.*, 10, 4529-37). All of these references are incorporated by reference herein.

Several investigators have demonstrated that nucleic acid molecules, such as ribozymes expressed from such promoters can function in mammalian cells (e.g. Kashani-Sabet et al., 1992, Antisense Res. Dev., 2, 3-15; Ojwang et al., 1992, Proc. Natl. Acad. Sci. USA, 89, 10802-6; Chen et al., 1992, Nucleic Acids Res., 20, 4581-9; Yu et al., 1993, Proc. Natl. Acad. Sci. USA, 90, 6340-4; L'Huillier et al., 1992, EMBO J., 11, 4411-8; Lisziewicz et al., 1993, Proc. Natl. Acad. Sci. U. S. A, 90, 8000-4; Thompson et al., 1995, Nucleic Acids Res., 23, 2259; and Sullenger & Cech, 1993, Science, 262, 1566). More specifically, transcription units such as the ones derived from genes encoding U6 small nuclear (snRNA), transfer RNA (tRNA) and adenovirus VA RNA are useful in generating high concentrations of desired RNA molecules such as ribozymes in cells (Thompson et al., supra; Couture and Stinchcomb, 1996, supra; Noonberg et al., 1994, Nucleic Acid Res., 22, 2830; Noonberg et al., US Patent No. 5,624,803; Good et al., 1997, Gene Ther., 4, 45; and Beigelman et al., International PCT Publication No. WO 96/18736; all of these publications are incorporated by reference herein. The above ribozyme transcription units can be incorporated into a variety of vectors for introduction into mammalian cells, including but not restricted to, plasmid DNA vectors, viral DNA vectors (such as adenovirus or adeno-associated virus vectors), or viral RNA vectors (such as retroviral or alphavirus vectors) (for a review, see Couture and Stinchcomb, 1996, supra).

In yet another aspect, the invention features an expression vector comprising a nucleic acid sequence encoding at least one of the nucleic acid molecules of the invention, in a manner which allows expression of that nucleic acid molecule. The expression vector comprises in one embodiment; a) a transcription initiation region; b) a transcription termination region; c) a nucleic acid sequence encoding at least one said nucleic acid molecule; and wherein said sequence is operably linked to said initiation region and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

In another preferred embodiment, the expression vector comprises: a) a transcription initiation region; b) a transcription termination region; c) an open reading frame; d) a nucleic acid sequence encoding at least one said nucleic acid

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molecule, wherein said sequence is operably linked to the 3'-end of said open reading frame; and wherein said sequence is operably linked to said initiation region, said open reading frame and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

In yet another embodiment the expression vector comprises: a) a transcription initiation region; b) a transcription termination region; c) an intron; d) a nucleic acid sequence encoding at least one said nucleic acid molecule; and wherein said sequence is operably linked to said initiation region, said intron and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

In another embodiment, the expression vector comprises: a) a transcription initiation region; b) a transcription termination region; c) an intron; d) an open reading frame; e) a nucleic acid sequence encoding at least one said nucleic acid molecule, wherein said sequence is operably linked to the 3'-end of said open reading frame; and wherein said sequence is operably linked to said initiation region, said intron, said open reading frame and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

Examples.

The following are non-limiting examples showing the selection, isolation, synthesis and activity of nucleic acids of the instant invention.

The following examples demonstrate the selection and design of Antisense, hammerhead, DNAzyme, NCH, Amberzyme, Zinzyme, or G-Cleaver ribozyme molecules and binding/cleavage sites within CLCA1 RNA.

Example 1: Reporter System

Applicant used a target discovery and target validation approach to finding genes that are involved in chronic mucous hypersecretion. In order to discover genes playing a role in the expression of mucins, a readily assayable reporter system was devised. The reporter system consists of a plasmid construct, termed pMUC5AC-EGFP, bearing a gene coding for Green Fluorescent Protein (GFP). The promoter region of the GFP gene is replaced by a portion of the Mucin 5AC promoter sufficient to direct efficient transcription of the GFP gene. The plasmid also contains the neomycin drug resistance gene.

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Example 2: Host Cell Line for Target Discovery

The cell line selected as host for these studies, NCI-H292 (ATCC CRL-1848), is derived from a human lung mucoepidermoid carcinoma. The cells retain mucoepidermoid characteristics in culture and endogenously express mucin 5AC and mucin 2. The pMUC5AC-EGFP plasmid was transfected into NCI-H292 using a cationic lipid formulation. Following transfection, the cells were subjected to limiting dilution cloning under selection by 600 µg/mL Geneticin. Cells retaining the pMUC5AC-EGFP plasmid survive the Geneticin treatment and form colonies derived from single surviving cells. The resulting clonal cell lines were screened by flow cytometry for the capacity to upregulate GFP production directed by the Mucin 5AC promoter. Treating the cells with sterilized M9 bacterial medium in which Pseudomonas aeruginosa had been cultured (Pseudomonas conditioned medium, PCM) induced the mucin promoter. The PCM is supplemented with phorbol myristate acetate (PMA).

A clonal cell line highly responsive to mucin promoter induction, designated H292/MUC5AC/EGFP Clone8 (H292 Clone 8) was selected as the reporter line for subsequent studies. The process for Target Discovery is described in Jarvis *et al.*, International PCT publication No. WO 98/50530, incorporated by reference herein in its entirety including the Figures.

20 Example 3: Ribozyme Library Construction

A ribozyme library was constructed with oligonucletides containing ribozymes with two randomized regions comprising six-nucleotide binding "arms" (Stem I and Stem III of a ribozyme-substrate complex). Oligo sequence 5' and 3' of the ribozyme contains restriction endonuclease cleavage sites for cloning. The 3' trailing sequence forms a stem-loop for priming DNA polymerase extension to form a double stranded molecule. The double-stranded ribozyme library was cloned into the U6+27 transcription unit located in the 5' LTR region of a retroviral vector containing the human nerve growth factor receptor (hNGFr) reporter gene. Positioning the U6+27/ribozyme transcription unit in the 5' LTR results in a duplication of the transcription unit when the vector integrates into the host cell genome. As a result, the ribozyme is transcribed by RNA polymerase III from U6+27 and by RNA polymerase II activity directed by the 5' LTR. The ribozyme library was packaged into retroviral particles that were used to infect and transduce H292 Clone 8 cells. Assay of the hNGFr reporter indicated that 50% to 60% of Clone 8 cells incorporated the ribozyme construct. Figure 5A and 5B describe the

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generalized scheme used in the ribozyme library construction and target discovery. By "randomized region" is meant a region of completely random sequence and/or partially random sequence. By completely random sequence is meant a sequence wherein theoretically there is equal representation of A, T, G and C nucleotides or modified derivatives thereof, at each position in the sequence. By partially random sequence is meant a sequence wherein there is an unequal representation of A, T, G and C nucleotides or modified derivatives thereof, at each position in the sequence. A partially random sequence can therefore have one or more positions of complete randomness and one or more positions with defined nucleotides.

10 Example 4: Enriching for Non-responders to Mucin Induction

Sorting of ribozyme library-containing cells was performed to enrich for cells that produce less GFP after treatment with PCM and PMA. Lower GFP production may be due to ribozyme action upon genes involved in the activation of the mucin promoter. Alternatively, ribozymes may directly target the mucin/GFP transcript resulting in reduced GFP expression.

Cells were seeded at a density of 1 x 10⁶ per 150 cm² style cell culture flasks. After 72 hours the standard cell culture medium was replaced with medium without fetal bovine serum. After 24 hours of serum deprivation the cells were treated with serum-containing medium supplemented with PCM (to 40%) and PMA (to 50 nM) to induced GFP production via the mucin promoter. After 20 to 22 hours, cells were monitored for GFP level on a FACStar Plus cell sorter.

Sorting was performed if 90% of ribozyme library cells from an unsorted control sample were induced to produce GFP above background levels. Two cell fractions were collected in each round of sorting.

In the initial sort the M1 gate collected cells in luminescence channels 1 to 4.5; those cells with the lowest GFP signal (5% of the induced population). The M2 sort gate collected cells in luminescence channels 4.5 to 20; cells with low GFP signal (10% of the induced population). The M1 and M2 fractions together represented the 15% of the induced population responding least to the GFP induction treatment. In order to assure that the diversity of the ribozyme library was represented 2.3 X 10⁶ cells were collected in the M1 fraction and 4.6 x 10⁶ cells were collected in the M2 fraction. The M1 and M2 fractions were cultured separately and representative portions of each were cryopreserved after each round of sorting.

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When treated with PCM and PMA prior to a second round of sorting, cells from both the M1 and M2 fractions responded as before with >90% of the cells producing elevated levels of GFP. The same sorting criteria and sort gates were used in the second round. As in the first round of sorting the M1 sort gate collected 5% of the treated cells (those with little or no GFP) and the M2 gate collected 10% of the cells. Two more rounds of sorting were performed using the same sorting criteria.

Prior to the third round of sorting the M1 fraction showed a three-fold enrichment of GFP negative cells. Prior to the fourth round of sorting both the M1 and M2 fractions were significantly enriched in cells unresponsive to the GFP induction treatment.

Following the third round of sorting the M1 fraction was selected to generate a database of ribozymes present in the sorted cells.

Example 5: Recovery of Ribozyme Sequence from Sorted Cells

Genomic DNA was obtained from sorted ribozyme library cells by standard methods. Nested polymerase chain reaction (PCR) primers (Sequence ID Nos. 5468 and 5469) that hybridized to the retroviral vector 5' and 3' of the ribozyme were used to recover and amplify the ribozyme sequences from the Clone 8 library cell DNA. The PCR product was ligated into a bacterial cloning vector. Two methods were developed to use the recovered ribozyme library, in plasmid form, to generate a database of ribozyme binding arm sequences. In the first approach the library was cloned into *E. coli*. DNA was prepared by plasmid isolation from bacterial colonies or by direct colony PCR and ribozyme arm sequence was determined. Over 450 sequences have been obtained by this method. A second method used the ribozyme library to transfect H292 Clone 8 cells. Clonal lines of stably transfected cells were established and induced with PCM and PMA. Those lines which failed to respond to GFP induction were probed by PCR for single ribozyme integration events. Over 300 sequences were obtained in this manner. The unique ribozyme sequences obtained by both methods were added to a Target Sequence Tag (TST) database.

Example 6: Bioinformatics

After sequencing 760 recovered ribozymes 171 unique sequences were found. Of the unique sequences, 91 have been recovered once and 80 have been found multiple times. Most of the repeated sequences have been found 2 to 11 times. One sequence has been recovered 145 times. The diversity of the sequences obtained

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indicates that the sorted cells are a promising source of information leading to target discovery.

Ribozyme binding arm sequences were compared to public and private gene data banks. Gene matches were compiled according to perfect and imperfect matches. Potential gene targets were categorized by the number of different ribozyme sequences matching each gene. Multiple ribozyme matches have been found for 180 genes. Genes with more than one perfect ribozyme match were given close attention. A total of 34 genes have been verified to date to have multiple perfect ribozyme matches. Of those at least 17 have protein products of known function.

Two perfect ribozyme matches were found for human calcium activated chloride channel-1 (hCLCA1). Each ribozyme matches at two sites in the hCLCA1 gene. A third sorted library ribozyme sequence "hits" hCLCA1 but has a single nucleotide mismatch.

15 Example 7: Selection of hCLCA1 for Validation

The selection of hCLCA1 as a candidate for target validation was based on bioinformatics and on emerging data in murine models of mucous hypersecretion in the trachea and lung. Two ribozymes (Seq. ID Nos. 2332 and 2273) recovered from cells that no longer respond to mucin promoter/GFP induction match perfectly to hCLCA1. A third has a single mismatch. Evidence from two murine models indicates a correlation between mucous hypersecretion in the lung and strong upregulation of gob-5 (GenBank ABO17156), a murine homologue of hCLCA1.

Example 8: Validation of hCLCA1

To validate hCLCA1 as a regulator of MUC5AC expression, GeneBloc reagents were designed (Table IX) to the hCLCA1 cDNA sequence (GenBank AF039400). GeneBloc reagents are complexed with a cationic lipid formulation prior to administration to H292/MUC5AC/GFP Clone 8 cells. Concentrations of the GeneBloc reagents administered range from 30 nM to 120 nM at cationic lipid concentrations of 4-6 μg/mL. Cells are treated with GeneBloc reagents for 72 to 96 hours. Before the termination of GeneBloc treatment, PCM (to 40 %) and PMA (to 50 nM) are added to induce the MUC5AC promoter. After twenty hours of induction the cells are harvested and assayed for phenotypic and molecular parameters. Reduced GFP expression in GeneBloc treated cells (measured by flow cytometry) is taken as evidence for validation of hCLCA1. Knockdown of hCLCA1

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RNA in GeneBloc treated cells can correlate with reduced endogenous MUC5AC RNA and reduced GFP RNA (from the MUC5AC/GFP construct) to complete validation of hCLCA1.

Example 9: Identification of Potential Target Sites in Human CLCA1 RNA

The sequence of human CLCA1 is screened for accessible sites using a computer-folding algorithm. Regions of the RNA are identified that do not form secondary folding structures. These regions contain potential ribozyme and/or antisense binding/cleavage sites. The sequences of these binding/cleavage sites are shown in **Tables III-IX**.

10 Example 10: Selection of Enzymatic Nucleic Acid Cleavage Sites in Human CLCA1 RNA

Ribozyme target sites are chosen by analyzing sequences of Human CLCA1 (GenBank accession numbers: NM_001285 and AF039400) and prioritizing the sites on the basis of folding. Ribozymes are designed that could bind each target and are individually analyzed by computer folding (Christoffersen *et al.*, 1994 *J. Mol. Struc. Theochem*, 311, 273; Jaeger *et al.*, 1989, *Proc. Natl. Acad. Sci. USA*, 86, 7706) to assess whether the ribozyme sequences fold into the appropriate secondary structure. Those ribozymes with unfavorable intramolecular interactions between the binding arms and the catalytic core are eliminated from consideration. As noted below, varying binding arm lengths can be chosen to optimize activity. Generally, at least 5 bases on each arm are able to bind to, or otherwise interact with, the target RNA.

Example 11: Chemical Synthesis and Purification of Ribozymes and Antisense for Efficient Cleavage and/or blocking of CLCA1 RNA

Ribozymes and antisense constructs are designed to anneal to various sites in the RNA message. The binding arms of the ribozymes are complementary to the target site sequences described above, while the antisense constructs are fully complimentary to the target site sequences described above. The ribozymes and antisense constructs were chemically synthesized. The method of synthesis used followed the procedure for normal RNA synthesis as described above and in Usman et al., (1987 J. Am. Chem. Soc., 109, 7845), Scaringe et al., (1990 Nucleic Acids Res., 18, 5433) and Wincott et al., supra, and made use of common nucleic acid protecting and coupling groups, such as dimethoxytrityl at the 5'-end, and phosphoramidites at the 3'-end. The average stepwise coupling yields were typically >98%.

Ribozymes and antisense constructs are also synthesized from DNA templates using bacteriophage T7 RNA polymerase (Milligan and Uhlenbeck, 1989, *Methods Enzymol*. 180, 51). Ribozymes and antisense constructs are purified by gel electrophoresis using general methods or are purified by high pressure liquid chromatography (HPLC; see Wincott *et al.*, *supra*; the totality of which is hereby incorporated herein by reference) and are resuspended in water. The sequences of the chemically synthesized ribozymes and antisense constructs used in this study are shown below in **Table III-IX**.

Indications

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Particular conditions and disease states that can be associated with CLCA1 expression modulation include but are not limited to Chronic Obstructive Pulmonary Disease (COPD), chronic bronchitis, asthma, cystic fibrosis, obstructive bowel syndrome, and any other diseases or conditions that are related to or will respond to the levels of CLCA1 in a cell or tissue, alone or in combination with other therapies.

The present body of knowledge in CLCA1 research indicates the need for methods to assay CLCA1 activity and for compounds that can regulate CLCA1 expression for research, diagnostic, and therapeutic use.

The nucleic acid molecules of the present invention may also be administered to a patient in combination with other therapeutic compounds to increase the overall therapeutic effect. The use of multiple compounds to treat an indication may increase the beneficial effects while reducing the presence of side effects. Oxygen therapy, bronchodilators, corticosteroids, antibacterials, vaccinations, acetylcysteine, mucokinetic agents, and DNase (Pulmozyme), are non-limiting examples of methods and/or treatments that can be used in combination with nucleic acid molecules of the invention. Those skilled in the art will recognize that other drug compounds and therapies can be similarly and readily combined with the nucleic acid molecules of the instant invention (e.g. ribozymes and antisense molecules) and are, therefore, within the scope of the instant invention.

Cell Culture

The cell culture system described in Example 8 can be used to evaluate nucleic acid molecules of the invention for efficacy in CLCA1 and mucin modulation.

Animal Models

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Numerous reports can be found which describe animal models relevant to disease states such as COPD and cystic fibrosis. These models can be used to determine efficacy of the nucleic acid molecules of the instant invention targeting such disease states or conditions. Animal models for chronic pulmonary disease (COPD) are described by Shapiro, 2000, Am. J. Respir. Cell Mol. Biol., 22(1), 4-7; Hogg, 1998, Ika Daigaku Zasshi, 56(3), 429-432; and Garssen et al., 1997, Inhalation Toxicol., 9(6), 581-599. Animal models for cystic fibrosis are described by Kent et al., 1997, J. Clin. Invest., 100(12), 3060-3069; Hill et al., 1997, 62(1), 113-122; Grubb and Gabriel, 1997, Am. J. Physiol., 272, G258-G266; Rozmahel, 1996, From: Diss. Abstr. Int. B 1997, 57(8), 4863; Van Doorninck et al., 1995, EMBO J., 14(18), 4403-11; and Zeiher et al., 1995, J. Clin. Invest., 96(4), 2051-64.

Diagnostic uses

The nucleic acid molecules of this invention (e.g., ribozymes) may be used as diagnostic tools to examine genetic drift and mutations within diseased cells or to detect the presence of CLCA1 RNA in a cell. The close relationship between ribozyme activity and the structure of the target RNA allows the detection of mutations in any region of the molecule which alters the base-pairing and threedimensional structure of the target RNA. By using multiple ribozymes described in this invention, one may map nucleotide changes which are important to RNA structure and function in vitro, as well as in cells and tissues. Cleavage of target RNAs with ribozymes may be used to inhibit gene expression and define the role (essentially) of specified gene products in the progression of disease. In this manner, other genetic targets may be defined as important mediators of the disease. These experiments will lead to better treatment of the disease progression by affording the possibility of combinational therapies (e.g., multiple ribozymes targeted to different genes, ribozymes coupled with known small molecule inhibitors, or intermittent treatment with combinations of ribozymes and/or other chemical or biological molecules). Other in vitro uses of ribozymes of this invention are well known in the art, and include detection of the presence of mRNAs associated with CLCA1-related condition. Such RNA is detected by determining the presence of a cleavage product after treatment with a ribozyme using standard methodology.

In a specific example, ribozymes which can cleave only wild-type or mutant forms of the target RNA are used for the assay. The first ribozyme is used to identify wild-type RNA present in the sample and the second ribozyme will be used

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to identify mutant RNA in the sample. As reaction controls, synthetic substrates of both wild-type and mutant RNA will be cleaved by both ribozymes to demonstrate the relative ribozyme efficiencies in the reactions and the absence of cleavage of the "non-targeted" RNA species. The cleavage products from the synthetic substrates will also serve to generate size markers for the analysis of wild-type and mutant RNAs in the sample population. Thus, each analysis can require two ribozymes, two substrates and one unknown sample, which will be combined into six reactions. The presence of cleavage products will be determined using an RNAse protection assay so that full-length and cleavage fragments of each RNA can be analyzed in one lane of a polyacrylamide gel. It is not absolutely required to quantify the results to gain insight into the expression of mutant RNAs and putative risk of the desired phenotypic changes in target cells. The expression of mRNA whose protein product is implicated in the development of the phenotype (i.e., CLCA1) is adequate to establish risk. If probes of comparable specific activity are used for both transcripts, then a qualitative comparison of RNA levels will be adequate and will decrease the cost of the initial diagnosis. Higher mutant form to wild-type ratios will be correlated with higher risk whether RNA levels are compared qualitatively or quantitatively.

Additional Uses

Potential usefulness of sequence-specific enzymatic nucleic acid molecules of the instant invention might have many of the same applications for the study of RNA that DNA restriction endonucleases have for the study of DNA (Nathans *et al.*, 1975 *Ann. Rev. Biochem.* 44:273). For example, the pattern of restriction fragments could be used to establish sequence relationships between two related RNAs, and large RNAs could be specifically cleaved to fragments of a size more useful for study. The ability to engineer sequence specificity of the enzymatic nucleic acid molecule is ideal for cleavage of RNAs of unknown sequence. Applicant describes the use of nucleic acid molecules to down-regulate gene expression of target genes in bacterial, microbial, fungal, viral, and eukaryotic systems including plant, or mammalian cells.

All patents and publications mentioned in the specification are indicative of the levels of skill of those skilled in the art to which the invention pertains. All references cited in this disclosure are incorporated by reference to the same extent as if each reference had been incorporated by reference in its entirety individually.

One skilled in the art would readily appreciate that the present invention is well adapted to carry out the objects and obtain the ends and advantages mentioned, as

well as those inherent therein. The methods and compositions described herein as presently representative of preferred embodiments are exemplary and are not intended as limitations on the scope of the invention. Changes therein and other uses will occur to those skilled in the art, which are encompassed within the spirit of the invention, are defined by the scope of the claims.

It will be readily apparent to one skilled in the art that varying substitutions and modifications may be made to the invention disclosed herein without departing from the scope and spirit of the invention. Thus, such additional embodiments are within the scope of the present invention and the following claims.

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The invention illustratively described herein suitably may be practiced in the absence of any element or elements, limitation or limitations which is not specifically disclosed herein. Thus, for example, in each instance herein any of the terms "comprising", "consisting essentially of" and "consisting of" may be replaced with either of the other two terms. The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention that in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed. Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments, optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention as defined by the description and the appended claims.

In addition, where features or aspects of the invention are described in terms of
Markush groups or other grouping of alternatives, those skilled in the art will
recognize that the invention is also thereby described in terms of any individual
member or subgroup of members of the Markush group or other group.

Other embodiments are within the following claims.

TABLE I

Characteristics of naturally occurring ribozymes

Group I Introns

- Size: ~150 to >1000 nucleotides.
- Requires a U in the target sequence immediately 5' of the cleavage site.
- Binds 4-6 nucleotides at the 5'-side of the cleavage site.
- Reaction mechanism: attack by the 3′-OH of guanosine to generate cleavage products with 3′-OH and 5′-guanosine.
- Additional protein cofactors required in some cases to help folding and maintainance of the active structure.
- Over 300 known members of this class. Found as an intervening sequence in *Tetrahymena thermophila* rRNA, fungal mitochondria, chloroplasts, phage T4, blue-green algae, and others.
- Major structural features largely established through phylogenetic comparisons, mutagenesis, and biochemical studies [i,ii].
- Complete kinetic framework established for one ribozyme [iii,iv,v,vi].
- Studies of ribozyme folding and substrate docking underway [vii, viii, ix].
- Chemical modification investigation of important residues well established [x,xi].
- The small (4-6 nt) binding site may make this ribozyme too non-specific for targeted RNA cleavage, however, the Tetrahymena group I intron has been used to repair a "defective" □-galactosidase message by the ligation of new □-galactosidase sequences onto the defective message [xii].

RNAse PRNA (M1 RNA)

- Size: ~290 to 400 nucleotides.
- RNA portion of a ubiquitous ribonucleoprotein enzyme.
- Cleaves tRNA precursors to form mature tRNA [xiii].
- Reaction mechanism: possible attack by M²⁺-OH to generate cleavage products with 3'-OH and 5'-phosphate.
- RNAse P is found throughout the prokaryotes and eukaryotes. The RNA subunit has been sequenced from bacteria, yeast, rodents, and primates.
- Recruitment of endogenous RNAse P for therapeutic applications is possible through hybridization of an External Guide Sequence (EGS) to the target RNA [xiv xv]
- Important phosphate and 2' OH contacts recently identified [xvi,xvii]

Group II Introns

- Size: >1000 nucleotides.
- Trans cleavage of target RNAs recently demonstrated [xviii,xix].

- Sequence requirements not fully determined.
- Reaction mechanism: 2'-OH of an internal adenosine generates cleavage products with 3'-OH and a "lariat" RNA containing a 3'-5' and a 2'-5' branch point.
- Only natural ribozyme with demonstrated participation in DNA cleavage [xx,xxi] in addition to RNA cleavage and ligation.
- Major structural features largely established through phylogenetic comparisons [xxii].
- Important 2' OH contacts beginning to be identified [xxiii]
- Kinetic framework under development [xxiv]

Neurospora VS RNA

- Size: ~144 nucleotides.
- Trans cleavage of hairpin target RNAs recently demonstrated [xxv].
- Sequence requirements not fully determined.
- Reaction mechanism: attack by 2'-OH 5' to the scissile bond to generate cleavage products with 2',3'-cyclic phosphate and 5'-OH ends.
- Binding sites and structural requirements not fully determined.
- Only 1 known member of this class. Found in Neurospora VS RNA.

Hammerhead Ribozyme

(see text for references)

- Size: ~13 to 40 nucleotides.
- Requires the target sequence UH immediately 5' of the cleavage site.
- Binds a variable number nucleotides on both sides of the cleavage site.
- Reaction mechanism: attack by 2′-OH 5′ to the scissile bond to generate cleavage products with 2′,3′-cyclic phosphate and 5′-OH ends.
- 14 known members of this class. Found in a number of plant pathogens (virusoids) that use RNA as the infectious agent.
- Essential structural features largely defined, including 2 crystal structures [xxvi,xxvii]
- Minimal ligation activity demonstrated (for engineering through in vitro selection) [xxviii]
- Complete kinetic framework established for two or more ribozymes [xxix].
- Chemical modification investigation of important residues well established [xxx].

Hairpin Ribozyme

- Size: ~50 nucleotides.
- Requires the target sequence GUC immediately 3' of the cleavage site.
- Binds 4-6 nucleotides at the 5'-side of the cleavage site and a variable number to the 3'-side of the cleavage site.
- Reaction mechanism: attack by 2'-OH 5' to the scissile bond to generate cleavage products with 2',3'-cyclic phosphate and 5'-OH ends.

- 3 known members of this class. Found in three plant pathogen (satellite RNAs
 of the tobacco ringspot virus, arabis mosaic virus and chicory yellow mottle
 virus) which uses RNA as the infectious agent.
- Essential structural features largely defined [xxxi,xxxii,xxxii,xxxiv]
- Ligation activity (in addition to cleavage activity) makes ribozyme amenable to engineering through in vitro selection [xxxv]
- Complete kinetic framework established for one ribozyme [xxxvi].
- Chemical modification investigation of important residues begun [xxxviii,xxxviii].

Hepatitis Delta Virus (HDV) Ribozyme

- Size: ~60 nucleotides.
- Trans cleavage of target RNAs demonstrated [xxxix].
- Binding sites and structural requirements not fully determined, although no sequences 5' of cleavage site are required. Folded ribozyme contains a pseudoknot structure [xl].
- Reaction mechanism: attack by 2'-OH 5' to the scissile bond to generate cleavage products with 2',3'-cyclic phosphate and 5'-OH ends.
- Only 2 known members of this class. Found in human HDV.
- Circular form of HDV is active and shows increased nuclease stability [xli]

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Table II:

£ } ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;				
Reagent	ents Amount	t Wait Time* DNA Wait Time* 2'-	Wait Time* 2'- O-methyl	Wait Time* RNA
Phosphoramidites 6.5	163 µL	45 sec	2.5 min	7.5 min
S-Ethyl Tetrazole 23.8	238 µL	45 sec	2.5 min	7.5 min
Acetic Anhydride 100	233 µL	5 sec	5 sec	5 sec
N-Methyl Imidazole 186	233 µL	5 sec	5 sec	5 sec
TCA 176	2.3 mL	21 sec	21 sec	21 sec
lodine 11.2	1.7 mL	45 sec	45 sec	45 sec
Beaucage 12.9	645 µL	100 sec	300 sec	300 sec
Acetonitrile	6.67 mL	- NA	NA	NA

B. 0.2 µmol Synthesis Cycle ABI 394 Instrument

Reagent	Equivalents	Amount	Wait Time* DNA Wait Time* 2'-	Wait Time* 2'- O-methyl	Wait Time* RNA
Phosphoramidites	15	31 µL	45 sec	233 sec	465 sec
S-Ethyl Tetrazole	38.7	31 µL	45 sec	233 min	465 sec
Acetic Anhydride	655	124 µL	2 sec	5 sec	5 sec
N-Methyl Imidazole	1245	124 µL	5 sec	5 sec	5 sec
TCA	700	732 µL	10 sec	10 sec	10 sec
lodine	20.6	244 µL	15 sec	15 sec	15 sec
Beaucage	7.7	232 µL	100 sec	300 sec	300 sec

Acetonitrile	NA AN	2.64 mL	∀ N	NA	¥N.

C. 0.2 µmol Synthesis Cycle 96 well Instrument

Reagent	Equivalents DNA/2'-O-methyl/Ribo	Amount DNA/2'-O-methyl/Ribo	Wait Time* DNA	Wait Time* 2'-O- methyl	Wait Time* Ribo
Phosphoramidites	22/33/66	40/60/120 µL	90 sec	180 sec	360sec
S-Ethyl Tetrazole	70/105/210	40/60/120 µL	90 sec	180 min	360 sec
Acetic Anhydride	265/265/265	50/50/50 µL	10 sec	10 sec	10 sec
N-Methyl Imidazole	502/502/502	50/50/50 µL	10 sec	10 sec	10 sec
TCA	238/475/475	250/500/500 µL	15 sec	15 sec	15 sec
lodine	8.8/6.8/6.8	80/80/80 pL	30 sec	30 sec	30 sec
Beaucage	34/51/51	80/120/120	100 sec	200 sec	200 sec
Acetonitrile	NA	1150/1150/1150 µL	NA	NA	NA

* Wait time does not include contact time during delivery.

 Table III: Human CLCA1 Hammerhead Ribozyme and Target Sequence
 249.021

1 able			,	249.021
Pos	Substrate	Seq ID No.	Ribozyme	Rz Seq ID
				No.
11	CUAAUGCU U UUGGUACA	1	UGUACCAA CUGAUGAG GCCGUUAGGC CGAA AGCAUUAC	2190
12	UAAUGCUU U UGGUACAA	2	UUGUACCA CUGAUGAG GCCGUUAGGC CGAA AAGCAUUA	2191
13	AAUGCUUU U GGUACAAA	3	UUUGUACC CUGAUGAG GCCGUUAGGC CGAA AAAGCAU	J 2192
17	CUUUUGGU A CAAAUGGA	4	UCCAUUUG CUGAUGAG GCCGUUAGGC CGAA ACCAAAAC	
34	UGUGGAAU A UAAUUGAA	5	UUCAAUUA CUGAUGAG GCCGUUAGGC CGAA AUUCCACA	
36	UGGAAUAU A AUUGAAUA	6	UAUUCAAU CUGAUGAG GCCGUUAGGC CGAA AUAUUCCA	
39	AAUAUAAU U GAAUAUUU	7	AAAUAUUC CUGAUGAG GCCGUUAGGC CGAA AUUAUAUI	_
44	AAUUGAAU A UUUUCUUG	8	CAAGAAAA CUGAUGAG GCCGUUAGGC CGAA AUUCAAU	
46	UUGAAUAU U UUCUUGUU	9	AACAAGAA CUGAUGAG GCCGUUAGGC CGAA AUAUUCAA	
47	UGAAUAUU U UCUUGUUU	10	AAACAAGA CUGAUGAG GCCGUUAGGC CGAA AAUAUUCA	
48	GAAUAUUU U CUUGUUUA	11	UAAACAAG CUGAUGAG GCCGUUAGGC CGAA AAAUAUUG	
49	AAUAUUUU C UUGUUUAA	12	UUAAACAA CUGAUGAG GCCGUUAGGC CGAA AAAAUAUU	
51	UAUUUUCU U GUUUAAGG	13	CCUUAAAC CUGAUGAG GCCGUUAGGC CGAA AGAAAAU	
54	UUUCUUGU U UAAGGGGA	14	UCCCCUUA CUGAUGAG GCCGUUAGGC CGAA ACAAGAAA	_
55	UUCUUGUU U AAGGGGAG	15	CUCCCCUU CUGAUGAG GCCGUUAGGC CGAA AACAAGAA	+
56	UCUUGUUU A AGGGGAGC	16	GCUCCCCU CUGAUGAG GCCGUUAGGC CGAA AAACAAGA	
77	AGAGGUGU U GAGGUUAU	17	AUAACCUC CUGAUGAG GCCGUUAGGC CGAA ACACCUCT	
83	GUUGAGGU U AUGUCAAG	18	CUUGACAU CUGAUGAG GCCGUUAGGC CGAA ACCUCAAC	
84	UUGAGGUU A UGUCAAGC	19	GCUUGACA CUGAUGAG GCCGUUAGGC CGAA AACCUCAI	
88	GGUUAUGU C AAGCAUCU	20	AGAUGCUU CUGAUGAG GCCGUUAGGC CGAA ACAUAACC	
95	UCAAGCAU C UGGCACAG	21	CUGUGCCA CUGAUGAG GCCGUUAGGC CGAA AUGCUUGA	2210
122	AUGGAAAU A UUUACAAG	22	CUUGUAAA CUGAUGAG GCCGUUAGGC CGAA AUUUCCAI	J 2211
124	GGAAAUAU U UACAAGUA	23	UACUUGUA CUGAUGAG GCCGUUAGGC CGAA AUAUUUCC	2212
125	GAAAUAUU U ACAAGUAC	24	GUACUUGU CUGAUGAG GCCGUUAGGC CGAA AAUAUUUG	2213
126	AAAUAUUU A CAAGUACG	25	CGUACUUG CUGAUGAG GCCGUUAGGC CGAA AAAUAUUU	J 2214
132	UUACAAGU A CGCAAUUU	26	AAAUUGCG CUGAUGAG GCCGUUAGGC CGAA ACUUGUAA	2215
139	UACGCAAU U UGAGACUA	27	UAGUCUCA CUGAUGAG GCCGUUAGGC CGAA AUUGCGUA	2216
140	ACGCAAUU U GAGACUAA	28	UUAGUCUC CUGAUGAG GCCGUUAGGC CGAA AAUUGCGU	J 2217
147	UUGAGACU A AGAUAUUG	29	CAAUAUCU CUGAUGAG GCCGUUAGGC CGAA AGUCUCAA	2218
152	ACUAAGAU A UUGUUAUC	30	GAUAACAA CUGAUGAG GCCGUUAGGC CGAA AUCUUAGG	J 2219
154	UAAGAUAU U GUUAUCAU	31	AUGAUAAC CUGAUGAG GCCGUUAGGC CGAA AUAUCUUA	A 2220
157	GAUAUUGU U AUCAUUCU	32	AGAAUGAU CUGAUGAG GCCGUUAGGC CGAA ACAAUAU	2221
158	AUAUUGUU A UCAUUCUC	33	GAGAAUGA CUGAUGAG GCCGUUAGGC CGAA AACAAUAI	J 2222
160	AUUGUUAU C AUUCUCCU	34	AGGAGAAU CUGAUGAG GCCGUUAGGC CGAA AUAACAAI	J 2223
163	GUUAUCAU U CUCCUAUU	35	AAUAGGAG CUGAUGAG GCCGUUAGGC CGAA AUGAUAAG	
164	UUAUCAUU C UCCUAUUG	36	CAAUAGGA CUGAUGAG GCCGUUAGGC CGAA AAUGAUAA	
166	AUCAUUCU C CUAUUGAA	37	UUCAAUAG CUGAUGAG GCCGUUAGGC CGAA AGAAUGAI	
169	AUUCUCCU A UUGAAGAC	38	GUCUUCAA CUGAUGAG GCCGUUAGGC CGAA AGGAGAAI	
171	UCUCCUAU U GAAGACAA	39	UUGUCUUC CUGAUGAG GCCGUUAGGC CGAA AUAGGAGA	
187	AGAGCAAU A GUAAAACA	40	UGUUUUAC CUGAUGAG GCCGUUAGGC CGAA AUUGCUCI	
190	GCAAUAGU A AAACACAU	41	AUGUGUUU CUGAUGAG GCCGUUAGGC CGAA ACUAUUG	
199	AAACACAU C AGGUCAGG	 	CCUGACCU CUGAUGAG GCCGUUAGGC CGAA AUGUGUU	
204	CAUCAGGU C AGGGGGUU	 	AACCCCCU CUGAUGAG GCCGUUAGGC CGAA ACCUGAUG	
212	CAGGGGGU U AAAGACCU	44	AGGUCUUU CUGAUGAG GCCGUUAGGC CGAA ACCCCCUG	
213	AGGGGGUU A AAGACCUG	45	CAGGUCUU CUGAUGAG GCCGUUAGGC CGAA ACCCCCG	
226	CCUGUGAU A AACCACUU	46	AAGUGGUU CUGAUGAG GCCGUUAGGC CGAA AACCCCC	
234	AAACCACU U CCGAUAAG	47	CUUAUCGG CUGAUGAG GCCGUUAGGC CGAA AGUGGUU	
234	AACCACUU C CGAUAAGU	48	ACUUAUCG CUGAUGAG GCCGUUAGGC CGAA AGUGGUU	
240	CUUCCGAU A AGUUGGAA	 		
	· · · · · · · · · · · · · · · · · · ·	49	UUCCAACU CUGAUGAG GCCGUUAGGC CGAA AUCGGAA	_1
244	CGAUAAGU U GGAAACGU	50	ACGUUUCC CUGAUGAG GCCGUUAGGC CGAA ACUUAUCC	
257	ACGUGUGU C UAUAUUUU	51	AAAAUAUA CUGAUGAG GCCGUUAGGC CGAA ACACACGU	
259	GUGUGUCU A UAUUUUCA	52	UGAAAAUA CUGAUGAG GCCGUUAGGC CGAA AGACACA	2241

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261	GUGUCUAU A UUUUCAUA	53	UAUGAAAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUAGACAC	2242
263	GUCUAUAU U UUCAUAUC	54	GAUAUGAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUAGAC	2243
264	UCUAUAUU U UCAUAUCU	55	AGAUAUGA	CUGAUGAG	GCCGUUAGGC	CGAA	AAUAUAGA	2244
265	CUAUAUUU U CAUAUCUG	56	CAGAUAUG	CUGAUGAG	GCCGUUAGGC	CGAA	AAAUAUAG	2245
266	UAUAUUUU C AUAUCUGU	57	ACAGAUAU	CUGAUGAG	GCCGUUAGGC	CGAA	AAAAUAUA	2246
269	AUUUUCAU A UCUGUAUA	58	UAUACAGA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGAAAAU	2247
271	UUUCAUAU C UGUAUAUA	59	UAUAUACA	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUGAAA	2248
275	AUAUCUGU A UAUAUAUA	60	UAUAUAUA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGAUAU	2249
277	AUCUGUAU A UAUAUAAU	61	AUUAUAUA	CUGAUGAG	GCCGUUAGGC	CGAA	AUACAGAU	2250
279	CUGUAUAU A UAUAAUGG	62			GCCGUUAGGC			
281	GUAUAUAU A UAAUGGUA	63			GCCGUUAGGC			
283	AUAUAUAU A AUGGUAAA	64			GCCGUUAGGC			
289	AUAAUGGU A AAGAAAGA	65			GCCGUUAGGC			
303	AGACACCU U CGUAACCC	66			GCCGUUAGGC			
304	GACACCUU C GUAACCCG	67			GCCGUUAGGC			
307	ACCUUCGU A ACCCGCAU	68		• • • • • • • • • • • • • • • • • • • •			ACGAAGGU	
316	ACCCGCAU U UUCCAAAG	69			GCCGUUAGGC		AUGCGGGU	
317	CCCGCAUU U UCCAAAGA	70			GCCGUUAGGC			2259
318	CCGCAUUU U CCAAAGAG	71	cucuuugg	CUGAUGAG	GCCGUUAGGC	CGAA	AAAUGCGG	2260
319	CGCAUUUU C CAAAGAGA	72	ucucuuug	CUGAUGAG	GCCGUUAGGC	CGAA	AAAAUGCG	2261
333	AGAGGAAU C ACAGGGAG	73	CUCCCUGU	CUGAUGAG	GCCGUUAGGC	CGAA	AUUCCUCU	2262
346	GGAGAUGU A CAGCAAUG	74	CAUUGCUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUCUCC	2263
362	GGGGCCAU U UAAGAGUU	75	AACUCUUA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGGCCCC	2264
363	GGGCCAUU U AAGAGUUC	76	GAACUCUU	CUGAUGAG	GCCGUUAGGC	CGAA	AAUGGCCC	2265
364	GGCCAUUU A AGAGUUCU	77	AGAACUCU	CUGAUGAG	GCCGUUAGGC	CGAA	AAAUGGCC	2266
370	UUAAGAGU U CUGUGUUC	78	GAACACAG	CUGAUGAG	GCCGUUAGGC	CGAA	ACUCUUAA	2267
371	UAAGAGUU C UGUGUUCA	79			GCCGUUAGGC			<u> </u>
377	UUCUGUGU U CAUCUUGA	80	<u> </u>		GCCGUUAGGC			
378	UCUGUGUU C AUCUUGAU	81			GCCGUUAGGC			2270
381	GUGUUCAU C UUGAUUCU	82			GCCGUUAGGC			
383	GUUCAUCU U GAUUCUUC	83	-		GCCGUUAGGC			
387	AUCUUGAU U CUUCACCU	84			GCCGUUAGGC			
388	UCUUGAUU C UUCACCUU	85			GCCGUUAGGC			
390	UUGAUUCU U CACCUUCU	86			GCCGUUAGGC			
391	UGAUUCUU C ACCUUCUA	87						2275
					GCCGUUAGGC			
396	CUUCACCU U CUAGAAGG	88		*** *** ***	GCCGUUAGGC			
397	UUCACCUU C UAGAAGGG	89			GCCGUUAGGC			
399	CACCUUCU A GAAGGGGC	90			GCCGUUAGGC			
415	CCCUGAGU A AUUCACUC				GCCGUUAGGC			
418	UGAGUAAU U CACUCAUU	92	I		GCCGUUAGGC			
419	GAGUAAUU C ACUCAUUC	93			GCCGUUAGGC			
423	AAUUCACU C AUUCAGCU	94		*******	GCCGUUAGGC			
426	UCACUCAU U CAGCUGAA	95			GCCGUUAGGC			
427	CACUCAUU C AGCUGAAC	96	GUUCAGCU	CUGAUGAG	GCCGUUAGGC	CGAA	AAUGAGUG	2285
446	CAAUGGCU A UGAAGGCA	97	UGCCUUCA	CUGAUGAG	GCCGUUAGGC	CGAA	AGCCAUUG	2286
456	GAAGGCAU U GUCGUUGC	98	GCAACGAC	CUGAUGAG	GCCGUUAGGC	CGAA	AUGCCUUC	2287
459	GGCAUUGU C GUUGCAAU	99			GCCGUUAGGC			
462	AUUGUCGU U GCAAUCGA	100			GCCGUUAGGC			
468	GUUGCAAU C GACCCCAA	101			GCCGUUAGGC			
498	GAAACACU C AUUCAACA	102			GCCGUUAGGC			
501	ACACUCAU U CAACAAAU	103			GCCGUUAGGC			1
502	CACUCAUU C AACAAAUA	104			GCCGUUAGGC			
510	CAACAAAU A AAGGACAU	105			GCCGUUAGGC			
533	CCAGGCAU C UCUGUAUC	106			GCCGUUAGGC			
535	AGGCAUCU C UGUAUCUG	107			GCCGUUAGGC			
539	AUCUCUGU A UCUGUUUG							
	ACCOCOGO A OCOGOOOG	108	CHANCAGA	UCAUGAG	GCCGUUAGGC	CGAA	ACAGAGAU	2297

541	CUCUGUAU C UGUUUGAA	109	UUCAAACA	CUGAUGAG	GCCGUUAGGC	CGAA	AUACAGAG	2298
545	GUAUCUGU U UGAAGCUA	110			GCCGUUAGGC			2299
546	UAUCUGUU U GAAGCUAC	111			GCCGUUAGGC			2300
553	UUGAAGCU A CAGGAAAG	112			GCCGUUAGGC			2301
	AAAGCGAU U UUAUUUCA	113			GCCGUUAGGC			2302
566	AAGCGAUU U UAUUUCAA	114			GCCGUUAGGC			2303
567	AGCGAUUU U AUUUCAAA	115			GCCGUUAGGC		AAAUCGCU	2304
568					GCCGUUAGGC			2305
569	GCGAUUUU A UUUCAAAA	116			GCCGUUAGGC			2306
571	GAUUUUAU U UCAAAAAU	117			GCCGUUAGGC			2307
572	AUUUUAUU U CAAAAAUG	118			GCCGUUAGGC		AAAUAAAA	2308
573	UUUUAUUU C AAAAAUGU	119			GCCGUUAGGC			2309
582	AAAAAUGU U GCCAUUUU	120			GCCGUUAGGC			2310
588	GUUGCCAU U UUGAUUCC	121			GCCGUUAGGC			2311
589	UUGCCAUU U UGAUUCCU	122						2312
590	UGCCAUUU U GAUUCCUG	123			GCCGUUAGGC			
594	AUUUUGAU U CCUGAAAC	124			GCCGUUAGGC			
595	UUUUGAUU C CUGAAACA	125			GCCGUUAGGC			
623	GGCUGACU A UGUGAGAC	126			GCCGUUAGGC			2315
639	CCAAAACU U GAGACCUA	127	· · · · · · · · · · · · · · · · · · ·		GCCGUUAGGC			2316
647	UGAGACCU A CAAAAAUG	128	1		GCCGUUAGGC			2317
663	GCUGAUGU U CUGGUUGC	129			GCCGUUAGGC			
664	CUGAUGUU C UGGUUGCU	130			GCCGUUAGGC		AACAUCAG	2319
669	GUUCUGGU U GCUGAGUC	131			GCCGUUAGGC			2320
677	UGCUGAGU C UACUCCUC	132			GCCGUUAGGC			2321
679	CUGAGUCU A CUCCUCCA	133	1		GCCGUUAGGC			2322
682	AGUCUACU C CUCCAGGU	134			GCCGUUAGGC			2323
685	CUACUCCU C CAGGUAAU	135	AUUACCUG	CUGAUGAG	GCCGUUAGGC	CGAA	AGGAGUAG	2324
691	CUCCAGGU A AUGAUGAA	136			GCCGUUAGGC			
704	UGAACCCU A CACUGAGC	137			GCCGUUAGGC			2326
747	GAAAGGAU C CACCUCAC	138			GCCGUUAGGC			2327
753	AUCCACCU C ACUCCUGA	139	UCAGGAGU	CUGAUGAG	GCCGUUAGGC	CGAA	AGGUGGAU	2328
757	ACCUCACU C CUGAUUUC	140	GAAAUCAG	CUGAUGAG	GCCGUUAGGC	CGAA	AGUGAGGU	2329
763	CUCCUGAU U UCAUUGCA	141	UGCAAUGA	CUGAUGAG	GCCGUUAGGC	CGAA	AUCAGGAG	2330
764	UCCUGAUU U CAUUGCAG	142	CUGCAAUG	CUGAUGAG	GCCGUUAGGC	CGAA	AAUCAGGA	2331
765	CCUGAUUU C AUUGCAGG	143	CCUGCAAU	CUGAUGAG	GCCGUUAGGC	CGAA	AAAUCAGG	2332
768	GAUUUCAU U GCAGGAAA	144	UUUCCUGC	CUGAUGAG	GCCGUUAGGC	CGAA	AUGAAAUC	2333
782	AAAAAAGU U AGCUGAAU	145	AUUCAGCU	CUGAUGAG	GCCGUUAGGC	CGAA	ACUUUUUU	2334
783	AAAAAGUU A GCUGAAUA	146	UAUUCAGC	CUGAUGAG	GCCGUUAGGC	CGAA	AACUUUUU	2335
791	AGCUGAAU A UGGACCAC	147	GUGGUCCA	CUGAUGAG	GCCGUUAGGC	CGAA	AUUCAGCU	2336
805	CACAAGGU A AGGCAUUU	148	AAAUGCCU	CUGAUGAG	GCCGUUAGGC	CGAA	ACCUUGUG	2337
812	UAAGGCAU U UGUCCAUG	149	CAUGGACA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGCCUUA	2338
813	AAGGCAUU U GUCCAUGA	150			GCCGUUAGGC			
816	GCAUUUGU C CAUGAGUG				GCCGUUAGGC			
829	AGUGGGCU C AUCUACGA	152			GCCGUUAGGC			
832	GGGCUCAU C UACGAUGG				GCCGUUAGGC			
834	GCUCAUCU A CGAUGGGG				GCCGUUAGGC			
846	UGGGGAGU A UUUGACGA	155			GCCGUUAGGC	'		
848	GGGAGUAU U UGACGAGU				GCCGUUAGGC			
849	GGAGUAUU U GACGAGUA	157			GCCGUUAGGC			
857	UGACGAGU A CAAUAAUG				GCCGUUAGGC			
862	AGUACAAU A AUGAUGAG	 			GCCGUUAGGC			1
875	UGAGAAAU U CUACUUAU				GCCGUUAGGC	·		
876	GAGAAAUU C UACUUAUC				GCCGUUAGGC			
878	GAAAUUCU A CUUAUCCA				GCCGUUAGGC			
881	AUUCUACU U AUCCAAUG				GCCGUUAGGC			
882	UUCUACUU A UCCAAUGG	+			GCCGUUAGGC	•		+
002	JUCUACUU A UCCAAUGG	1 104	CCAUUGUA	COGROGAG	. CCCCCOAGGC		onononn	

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884	CUACUUAU C CAAUGGAA	165			GCCGUUAGGC			
897	GGAAGAAU A CAAGCAGU	166	-		GCCGUUAGGC			2355
906	CAAGCAGU A AGAUGUUC	167	1		GCCGUUAGGC			2356
913	UAAGAUGU U CAGCAGGU	168			GCCGUUAGGC			2357
914	AAGAUGUU C AGCAGGUA	169	UACCUGCU	CUGAUGAG	GCCGUUAGGC	CGAA	AACAUCUU	2358
922	CAGCAGGU A UUACUGGU	170	ACCAGUAA	CUGAUGAG	GCCGUUAGGC	CGAA	ACCUGCUG	2359
924	GCAGGUAU U ACUGGUAC	171	GUACCAGU	CUGAUGAG	GCCGUUAGGC	CGAA	AUACCUGC	2360
925	CAGGUAUU A CUGGUACA	172	UGUACCAG	CUGAUGAG	GCCGUUAGGC	CGAA	AAUACCUG	2361
931	UUACUGGU A CAAAUGUA	173	UACAUUUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACCAGUAA	2362
939	ACAAAUGU A GUAAAGAA	174	UUCUUUAC	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUUUGU	2363
942	AAUGUAGU A AAGAAGUG	175	CACUUCUU	CUGAUGAG	GCCGUUAGGC	CGAA	ACUACAUU	2364
952	AGAAGUGU C AGGGAGGC	176	GCCUCCCU	CUGAUGAG	GCCGUUAGGC	CGAA	ACACUUCU	2365
967	GCAGCUGU U ACACCAAA	177	UUUGGUGU	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGCUGC	2366
968	CAGCUGUU A CACCAAAA	178	UUUUGGUG	CUGAUGAG	GCCGUUAGGC	CGAA	AACAGCUG	2367
986	AUGCACAU U CAAUAAAG	179	CUUUAUUG	CUGAUGAG	GCCGUUAGGC	CGAA	AUGUGCAU	2368
987	UGCACAUU C AAUAAAGU	180	 		_ 		AAUGUGCA	2369
991	CAUUCAAU A AAGUUACA	181	<u> </u>				AUUGAAUG	2370
996	AAUAAAGU U ACAGGACU	182	AGUCCUGU		GCCGUUAGGC			2371
997	AUAAAGUU A CAGGACUC	183			GCCGUUAGGC			2372
1005	ACAGGACU C UAUGAAAA	184			GCCGUUAGGC			2372
1003	AGGACUCU A UGAAAAAG	185					AGAGUCCU	2374
ļ	AUGUGAGU U UGUUCUCC				GCCGUUAGGC			2375
1025		186	 					
1026	UGUGAGUU U GUUCUCCA	187	UGGAGAAC		GCCGUUAGGC		AACUCACA	2376
1029	GAGUUUGU U CUCCAAUC	188			GCCGUUAGGC			2377
1030	AGUUUGUU C UCCAAUCC	189	1		GCCGUUAGGC			2378
1032	UUUGUUCU C CAAUCCCG	190	··· · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	GCCGUUAGGC			2379
1037	UCUCCAAU C CCGCCAGA	191			GCCGUUAGGC			
1057	AGAAGGCU U CUAUAAUG	192			GCCGUUAGGC			
1058	GAAGGCUU C UAUAAUGU	193			GCCGUUAGGC			2382
1060	AGGCUUCU A UAAUGUUU	194	AAACAUUA		GCCGUUAGGC			2383
1062	GCUUCUAU A AUGUUUGC	195	GCAAACAU	CUGAUGAG	GCCGUUAGGC	CGAA	AUAGAAGC	2384
1067	UAUAAUGU U UGCACAAC	196	GUUGUGCA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUUAUA	2385
1068	AUAAUGUU U GCACAACA	197	uguugugc	CUGAUGAG	GCCGUUAGGC	CGAA	AACAUUAU	2386
1080	CAACAUGU U GAUUCUAU	198	AUAGAAUC	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUGUUG	2387
1084	AUGUUGAU U CUAUAGUU	199	AACUAUAG	CUGAUGAG	GCCGUUAGGC	CGAA	AUCAACAU	2388
1085	UGUUGAUU C UAUAGUUG	200	CAACUAUA	CUGAUGAG	GCCGUUAGGC	CGAA	AAUCAACA	2389
1087	UUGAUUCU A UAGUUGAA	201	UUCAACUA	CUGAUGAG	GCCGUUAGGC	CGAA	AGAAUCAA	2390
1089	GAUUCUAU A GUUGAAUU	202	AAUUCAAC	CUGAUGAG	GCCGUUAGGC	CGAA	AUAGAAUC	2391
1092	UCUAUAGU U GAAUUCUG	203	CAGAAUUC	CUGAUGAG	GCCGUUAGGC	CGAA	ACUAUAGA	2392
1097		204	1		GCCGUUAGGC			
1098	GUUGAAUU C UGUACAGA	205			GCCGUUAGGC			
1102		206	UUGUUCUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGAAUU	2395
1129	AAGAAGCU C CAAACAAG	207	CUUGUUUG	CUGAUGAG	GCCGUUAGGC	CGAA	AGCUUCUU	2396
1144		208	GCAUUUUU	CUGAUGAG	GCCGUUAGGC	CGAA	AUUUUGCU	
1156		209			GCCGUUAGGC			ļ
1158	UGCAAUCU C CGAAGCAC	210			GCCGUUAGGC			1
1179		211			GCCGUUAGGC			
1186	UCCGUGAU U CUGAGGAC	212			GCCGUUAGGC			
1187	CCGUGAUU C UGAGGACU	213			GCCGUUAGGC			
1196		214	+		GCCGUUAGGC			-
1197		215	1		GCCGUUAGGC			
1198		216			GCCGUUAGGC			
1210		217		· · · · · · · · · · · · · · · · · · ·	GCCGUUAGGC			
1213	CCACUCCU A UGACAACA	218	·					
1234		219			GCCGUUAGGC			1
					GCCGUUAGGC			
1241	UCCCACCU U CUCAUUGC	220	GCAAUGAG	CUGAUGAG	GCCGUUAGGC	CGAA	AGGUGGGA	2409

		,		31				
1242	CCCACCUU C UCAUUGCU	221			GCCGUUAGGC			L
1244	CACCUUCU C AUUGCUGC	222	GCAGCAAU	CUGAUGAG	GCCGUUAGGC	CGAA	AGAAGGUG	2411
1247	CUUCUCAU U GCUGCAGA	223	UCUGCAGC	CUGAUGAG	GCCGUUAGGC	CGAA	AUGAGAAG	2412
1257	CUGCAGAU U GGACAAAG	224	CUUUGUCC	CUGAUGAG	GCCGUUAGGC	CGAA	AUCUGCAG	2413
1269	CAAAGAAU U GUGUGUUU	225	AAACACAC	CUGAUGAG	GCCGUUAGGC	CGAA	AUUCUUUG	2414
1276	UUGUGUGU U UAGUCCUU	226	AAGGACUA	CUGAUGAG	GCCGUUAGGC	CGAA	ACACACAA	2415
1277	UGUGUGUU U AGUCCUUG	227	CAAGGACU	CUGAUGAG	GCCGUUAGGC	CGAA	AACACACA	2416
1278	GUGUGUUU A GUCCUUGA	228	UCAAGGAC	CUGAUGAG	GCCGUUAGGC			
1281	UGUUUAGU C CUUGACAA	229			GCCGUUAGGC			
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1292	UGACAAAU C UGGAAGCA	231			GCCGUUAGGC			l.
1312	CGACUGGU A ACCGCCUC	232			GCCGUUAGGC			
1320	AACCGCCU C AAUCGACU	233			GCCGUUAGGC			1.
1324	GCCUCAAU C GACUGAAU	234			GCCGUUAGGC			2423
1333	GACUGAAU C AAGCAGGC	235			GCCGUUAGGC			2424
1347	GGCCAGCU U UUCCUGCU	236			GCCGUUAGGC			
1348	GCCAGCUU U UCCUGCUG	237			GCCGUUAGGC			2426
1349	CCAGCUUU U CCUGCUGC	238			GCCGUUAGGC			
1350	CAGCUUUU C CUGCUGCA	239			GCCGUUAGGC			
1365	CAGACAGU U GAGCUGGG	240			GCCGUUAGGC			
1376	GCUGGGGU C CUGGGUUG	241						
1383	UCCUGGGU U GGGAUGGU	241			GCCGUUAGGC GCCGUUAGGC			2430
1397	GGUGACAU U UGACAGUG	243			GCCGUUAGGC			2431
1398	GUGACAUU U GACAGUGC							2432
1416	GCCCAUGU A CAAAGUGA	244			GCCGUUAGGC			2433
1418		245			GCCGUUAGGC			2434
1431	AGUGAACU C AUACAGAU	246			GCCGUUAGGC			2435
1431	GAACUCAU A CAGAUAAA	247		·	GCCGUUAGGC			2436
1464	AUACAGAU A AACAGUGG	248			GCCGUUAGGC			2437
	GACACACU C GCCAAAAG	249			GCCGUUAGGC			2438
1475	CAAAAGAU U ACCUGCAG	250			GCCGUUAGGC			2439
1476	AAAAGAUU A CCUGCAGC	251			GCCGUUAGGC			
1489	CAGCAGCU U CAGGAGGG	252		CUGAUGAG				2441
1490	AGCAGCUU C AGGAGGGA	253			GCCGUUAGGC			2442
1502	AGGGACGU C CAUCUGCA	254			GCCGUUAGGC			2443
1506	ACGUCCAU C UGCAGCGG	255			GCCGUUAGGC			2444
1518	AGCGGGCU U CGAUCGGC	256			GCCGUUAGGC			2445
1519	GCGGGCUU C GAUCGGCA	257			GCCGUUAGGC			2446
1523	GCUUCGAU C GGCAUUUA	258			GCCGUUAGGC			2447
	AUCGGCAU U UACUGUGA	259			GCCGUUAGGC			
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1539	ACUGUGAU U AGGAAGAA	262			GCCGUUAGGC			
1540	CUGUGAUU A GGAAGAAA	263			GCCGUUAGGC			
1550	GAAGAAAU A UCCAACUG	264			GCCGUUAGGC			
1552	AGAAAUAU C CAACUGAU	265			GCCGUUAGGC			2454
1565	UGAUGGAU C UGAAAUUG	266			GCCGUUAGGC			2455
1572	UCUGAAAU U GUGCUGCU	267			GCCGUUAGGC			2456
1603	ACAACACU A UAAGUGGG	268			GCCGUUAGGC			2457
1605	AACACUAU A AGUGGGUG	269	CACCCACU	CUGAUGAG	GCCGUUAGGC	CGAA	AUAGUGUU	2458
1616	UGGGUGCU U UAACGAGG	270			GCCGUUAGGC			2459
1617	GGGUGCUU U AACGAGGU	271			GCCGUUAGGC			2460
1618	GGUGCUUU A ACGAGGUC	272			GCCGUUAGGC			
1626	AACGAGGU C AAACAAAG	273			GCCGUUAGGC			
1644	GGUGCCAU C AUCCACAC	274			GCCGUUAGGC			
1647	GCCAUCAU C CACACAGU	275			GCCGUUAGGC			2464
1656	CACACAGU C GCUUUGGG	276			GCCGUUAGGC			2465

1660	CAGUCGCU U UGGGGCCC	277			GCCGUUAGGC			
1661	AGUCGCUU U GGGGCCCU	278			GCCGUUAGGC			2467
1670	GGGGCCCU C UGCAGCUC	279			GCCGUUAGGC			2468
1678	CUGCAGCU C AAGAACUA	280	UAGUUCUU	CUGAUGAG	GCCGUUAGGC			2469
1686	CAAGAACU A GAGGAGCU	281	AGCUCCUC	CUGAUGAG	GCCGUUAGGC	CGAA	AGUUCUUG	2470
1697	GGAGCUGU C CAAAAUGA	282	UCAUUUUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGCUCC	2471
1714	CAGGAGGU U UACAGACA	283	UGUCUGUA	CUGAUGAG	GCCGUUAGGC	CGAA	ACCUCCUG	2472
1715	AGGAGGUU U ACAGACAU	284			GCCGUUAGGC			2473
1716	GGAGGUUU A CAGACAUA	285			GCCGUUAGGC		AAACCUCC	2474
1724	ACAGACAU A UGCUUCAG	286			GCCGUUAGGC		AUGUCUGU	2475
1729	CAUAUGCU U CAGAUCAA	287		CUGAUGAG		CGAA	AGCAUAUG	2476
1730	AUAUGCUU C AGAUCAAG	288			GCCGUUAGGC	CGAA	AAGCAUAU	2477
1735	CUUCAGAU C AAGUUCAG	289			GCCGUUAGGC	CGAA	AUCUGAAG	2478
1740	GAUCAAGU U CAGAACAA	290			GCCGUUAGGC		ACUUGAUC	2479
	AUCAAGUU C AGAACAAU	291	l		GCCGUUAGGC		AACUUGAU	2480
1741	AAUGGCCU C AUUGAUGC	292			GCCGUUAGGC		AGGCCAUU	2481
1755	GGCCUCAU U GAUGCUUU	293	AAAGCAUC				AUGAGGCC	2482
1758	1		t e		GCCGUUAGGC			2483
1765	UUGAUGCU U UUGGGGCC	294			GCCGUUAGGC		AAGCAUCA	2484
1766	UGAUGCUU U UGGGGCCC	295			GCCGUUAGGC		AAAGCAUC	2485
1767	GAUGCUUU U GGGGCCCU	296					AGGGCCCC	
1776	GGGGCCCU U UCAUCAGG	297			GCCGUUAGGC			
1777	GGGCCCUU U CAUCAGGA	298			GCCGUUAGGC			
1778	GGCCCUUU C AUCAGGAA	299			GCCGUUAGGC			
1781	CCUUUCAU C AGGAAAUG	300			GCCGUUAGGC			
1797	GGAGCUGU C UCUCAGCG	301			GCCGUUAGGC			
1799	AGCUGUCU C UCAGCGCU	302			GCCGUUAGGC			
1801	CUGUCUCU C AGCGCUCC	303			GCCGUUAGGC			
1808	UCAGCGCU C CAUCCAGC	304			GCCGUUAGGC			
1812	CGCUCCAU C CAGCUUGA	305	UCAAGCUG	CUGAUGAG	GCCGUUAGGC			
1818	AUCCAGCU U GAGAGUAA	306	I	CUGAUGAG				
1825	UUGAGAGU A AGGGAUUA	307			GCCGUUAGGC			
1832	UAAGGGAU U AACCCUCC	308			GCCGUUAGGC			
1833	AAGGGAUU A ACCCUCCA	309			GCCGUUAGGC			
1839	UUAACCCU C CAGAACAG	310			GCCGUUAGGC			
1872	ACAGUGAU C GUGGACAG	311			GCCGUUAGGC			
1900	AGGACACU U UGUUUCUU	312	AAGAAACA	CUGAUGAG	GCCGUUAGGC	CGA	A AGUGUCCU	2501
1901	GGACACUU U GUUUCUUA	313	UAAGAAAC	CUGAUGAG	GCCGUUAGGC	CGAZ	AAGUGUCC	2502
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1906		316			GCCGUUAGGC			
1908					GCCGUUAGGC			
1909					GCCGUUAGGC			
1911		319			GCCGUUAGGC			
1930		320			GCCGUUAGGC			
1938					GCCGUUAGGC			
1941					GCCGUUAGGC			
1941		323			GCCGUUAGGC			
1942		324			GCCGUUAGGC			
					GCCGUUAGGC			
1951					GCCGUUAGGC			
1976		+			GCCGUUAGGC			
1977					GCCGUUAGGC			
1980								
2006					GCCGUUAGGC			
2010					GCCGUUAGGC			
2016		-+			GCCGUUAGGC			
2025	CCAGGCAU U GCUAAGGU	332	ACCUUAGO	: CUGAUGA	GCCGUUAGGC	CGA	A AUGCCUGC	2521

							2 GGZ ATTGG	2522
2029	GCAUUGCU A AGGUUGGC	333			GCCGUUAGGC			2522
2034	GCUAAGGU U GGCACUUG	334			GCCGUUAGGC			2523
2041	UUGGCACU U GGAAAUAC	335			GCCGUUAGGC			2524
2048	UUGGAAAU A CAGUCUGC	336			GCCGUUAGGC		AUUUCCAA	2525
2053	AAUACAGU C UGCAAGCA	337	UGCUUGCA		GCCGUUAGGC			2526
2066	AGCAAGCU C ACAAACCU	338			GCCGUUAGGC			2527
2075	ACAAACCU U GACCCUGA	339			GCCGUUAGGC			2528
2088	CUGACUGU C ACGUCCCG	340	CGGGACGU	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGUCAG	2529
2093	UGUCACGU C CCGUGCGU	341	ACGCACGG	CUGAUGAG	GCCGUUAGGC	CGAA	ACGUGACA	2530
2102	CCGUGCGU C CAAUGCUA	342	UAGCAUUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACGCACGG	2531
2110	CCAAUGCU A CCCUGCCU	343	AGGCAGGG	CUGAUGAG	GCCGUUAGGC	CGAA	AGCAUUGG	2532
2119	CCCUGCCU C CAAUUACA	344	UGUAAUUG	CUGAUGAG	GCCGUUAGGC	CGAA	AGGCAGGG	2533
2124	CCUCCAAU U ACAGUGAC	345	GUCACUGU	CUGAUGAG	GCCGUUAGGC	CGAA	AUUGGAGG	2534
2125	CUCCAAUU A CAGUGACU	346	AGUCACUG	CUGAUGAG	GCCGUUAGGC	CGAA	AAUUGGAG	2535
2134	CAGUGACU U CCAAAACG	347	CGUUUUGG	CUGAUGAG	GCCGUUAGGC	CGAA	AGUCACUG	2536
2135	AGUGACUU C CAAAACGA	348	<u> </u>		GCCGUUAGGC		AAGUCACU	2537
2162	CAGCAAAU U CCCCAGCC	349			GCCGUUAGGC		AUUUGCUG	2538
2163	AGCAAAUU C CCCAGCCC	350	GGGCUGGG				AAUUUGCU	2539
2173	CCAGCCCU C UGGUAGUU	351			GCCGUUAGGC		AGGGCUGG	2540
2178	CCUCUGGU A GUUUAUGC	352			GCCGUUAGGC		ACCAGAGG	2541
2181	CUGGUAGU U UAUGCAAA	353			GCCGUUAGGC		ACUACCAG	2542
	UGGUAGUU U AUGCAAAU	354	1		GCCGUUAGGC		AACUACCA	2543
2182	GGUAGUUU A UGCAAAUA	355	<u> </u>		GCCGUUAGGC		AAACUACC	2544
2183	AUGCAAAU A UUCGCCAA	356			GCCGUUAGGC			
2191	<u></u>				GCCGUUAGGC			2546
2193	GCAAAUAU U CGCCAAGG	357			GCCGUUAGGC			2547
2194	CAAAUAUU C GCCAAGGA	358			GCCGUUAGGC			2548
2207	AGGAGCCU C CCCAAUUC	359			GCCGUUAGGC			2549
2214	UCCCCAAU U CUCAGGGC	360				.,		2550
2215	CCCCAAUU C UCAGGGCC	361			GCCGUUAGGC			
2217	CCAAUUCU C AGGGCCAG	362	CUGGCCCU		GCCGUUAGGC			2551
2229	GCCAGUGU C ACAGCCCU	363	AGGGCUGU		GCCGUUAGGC			2552
2241	GCCCUGAU U GAAUCAGU	364			GCCGUUAGGC			2553
2246	GAUUGAAU C AGUGAAUG	365			GCCGUUAGGC			
2265	AAAACAGU U ACCUUGGA	366			GCCGUUAGGC	<u> </u>		
2266	AAACAGUU A CCUUGGAA	367			GCCGUUAGGC			2556
2270	AGUUACCU U GGAACUAC	368			GCCGUUAGGC			
2277	UUGGAACU A CUGGAUAA	369			GCCGUUAGGC			
2284	UACUGGAU A AUGGAGCA	370			GCCGUUAGGC			
2305	CUGAUGCU A CUAAGGAU	371			GCCGUUAGGC			
2308					GCCGUUAGGC			
2322					GCCGUUAGGC			
2324	CGGUGUCU A CUCAAGGU	374			GCCGUUAGGC			
2327	UGUCUACU C AAGGUAUU	375			GCCGUUAGGC			
2333	CUCAAGGU A UUUCACAA	376			GCCGUUAGGC			
2335	CAAGGUAU U UCACAACU	377	AGUUGUGA	CUGAUGAC	GCCGUUAGGC	CGA	AUACCUUG	2566
2336			AAGUUGUG	CUGAUGAC	GCCGUUAGGC	CGAZ	AAUACCUU	2567
2337			UAAGUUGU	CUGAUGAG	GCCGUUAGGC	CGA	AAAUACCU	2568
2344			CGUGUCAU	CUGAUGAG	GCCGUUAGGC	CGA	A AGUUGUGA	2569
2345					GCCGUUAGGC			
2359					GCCGUUAGGC			
2363					GCCGUUAGGC			
2370					GCCGUUAGGC			
2383		-			GCCGUUAGGC			
2394		+			GCCGUUAGGC			
2395		387			GCCGUUAGGC			
2418					GCCGUUAGGC			
2410	ACAGGAG A CCCCAGCA	1 200	10000000	COCHOON	. 50000011000			1-2.,

	2 6 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	200	T	GITGALIGAG	GGGGITTIN GGG	GG 3 3	A GA GITGGIT	2570
2441	AGCACUGU A CAUACCUG	389			GCCGUUAGGC			
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2457	GGCUGGAU U GAGAAUGA	391			GCCGUUAGGC			2580
2472	GAUGAAAU A CAAUGGAA	392			GCCGUUAGGC			2581
2482	AAUGGAAU C CACCAAGA	393					AUUCCAUU	2582
2499	CCUGAAAU U AAUAAGGA	394			GCCGUUAGGC			2583
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2503	AAAUUAAU A AGGAUGAU	396	AUCAUCCU	CUGAUGAG	GCCGUUAGGC	CGAA	UUUAAUUU	2585
2514	GAUGAUGU U CAACACAA	397	UUGUGUUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUCAUC	2586
2515	AUGAUGUU C AACACAAG	398	CUUGUGUU	CUGAUGAG	GCCGUUAGGC	CGAA	AACAUCAU	2587
2533	AAGUGUGU U UCAGCAGA	399	UCUGCUGA	CUGAUGAG	GCCGUUAGGC	CGAA	ACACACUU	2588
2534	AGUGUGUU U CAGCAGAA	400	UUCUGCUG	CUGAUGAG	GCCGUUAGGC	CGAA	AACACACU	2589
2535	GUGUGUUU C AGCAGAAC	401	GUUCUGCU	CUGAUGAG	GCCGUUAGGC	CGAA	AAACACAC	2590
2546	CAGAACAU C CUCGGGAG	402	CUCCCGAG	CUGAUGAG	GCCGUUAGGC	CGAA	AUGUUCUG	2591
2549	AACAUCCU C GGGAGGCU	403	AGCCUCCC	CUGAUGAG	GCCGUUAGGC	CGAA	AGGAUGUU	2592
2558	GGGAGGCU C AUUUGUGG	404	CCACAAAU	CUGAUGAG	GCCGUUAGGC	CGAA	AGCCUCCC	2593
2561	AGGCUCAU U UGUGGCUU	405	AAGCCACA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGAGCCU	2594
2562	GGCUCAUU U GUGGCUUC	406	GAAGCCAC	CUGAUGAG	GCCGUUAGGC	CGAA	AAUGAGCC	2595
2569	UUGUGGCU U CUGAUGUC	407	GACAUCAG	CUGAUGAG	GCCGUUAGGC	CGAA	AGCCACAA	2596
2570	UGUGGCUU C UGAUGUCC	408	GGACAUCA	CUGAUGAG	GCCGUUAGGC	CGAA	AAGCCACA	2597
2577	UCUGAUGU C CCAAAUGC	409	GCAUUUGG	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUCAGA	2598
2587	CAAAUGCU C CCAUACCU	410	AGGUAUGG	CUGAUGAG	GCCGUUAGGC	CGAA	AGCAUUUG	2599
2592	GCUCCCAU A CCUGAUCU	411	AGAUCAGG	CUGAUGAG	GCCGUUAGGC	CGAA	AUGGGAGC	2600
2599	UACCUGAU C UCUUCCCA	412			GCCGUUAGGC		AUCAGGUA	2601
2601	CCUGAUCU C UUCCCACC	413	 	CUGAUGAG			AGAUCAGG	
2603	UGAUCUCU U CCCACCUG	414	 		GCCGUUAGGC		AGAGAUCA	
2604	GAUCUCUU C CCACCUGG	415			GCCGUUAGGC		AAGAGAUC	2604
2619	GGCCAAAU C ACCGACCU	416			GCCGUUAGGC		AUUUGGCC	2605
2640	GCGGAAAU U CACGGGGG	417			GCCGUUAGGC			2606
2641	CGGAAAUU C ACGGGGGC	418	GCCCCGU		GCCGUUAGGC		AAUUUCCG	2607
2653	GGGGCAGU C UCAUUAAU	419	 		GCCGUUAGGC		ACUGCCC	2608
2655	GGCAGUCU C AUUAAUCU	420	AGAUUAAU		GCCGUUAGGC			2609
2658	AGUCUCAU U AAUCUGAC	421	GUCAGAUU		GCCGUUAGGC			2610
2659	GUCUCAUU A AUCUGACU	422	AGUCAGAU		GCCGUUAGGC			2611
2662	UCAUUAAU C UGACUUGG	423			GCCGUUAGGC			2612
2668	AUCUGACU U GGACAGCU	424	AGCUGUCC		GCCGUUAGGC			2613
2677		425	AUCCCCAG		GCCGUUAGGC			2614
	GGACAGCU C CUGGGGAU GGGAUGAU U AUGACCAU	426			GCCGUUAGGC			2615
2689	GGAUGAUU A UGACCAUG				GCCGUUAGGC			1
	GAACAGCU C ACAAGUAU	427	·					
2707	UCACAAGU A UAUCAUUC				GCCGUUAGGC			-
2714		429	<u> </u>		GCCGUUAGGC			
2716	ACAAGUAU A UCAUUCGA	430			GCCGUUAGGC			<u> </u>
2718	AAGUAUAU C AUUCGAAU	431		· · · · · · · · · · · · · · · · · · ·	GCCGUUAGGC			1
2721	UAUAUCAU U CGAAUAAG	432	4		GCCGUUAGGC			-
2722	AUAUCAUU C GAAUAAGU	433	·		GCCGUUAGGC			
2727	AUUCGAAU A AGUACAAG	434	+		GCCGUUAGGC			
2731	GAAUAAGU A CAAGUAUU	435	+		GCCGUUAGGC			
2737	GUACAAGU A UUCUUGAU	436			GCCGUUAGGC			
2739	ACAAGUAU U CUUGAUCU	437			GCCGUUAGGC			
2740	CAAGUAUU C UUGAUCUC	438			GCCGUUAGGC			
2742	AGUAUUCU U GAUCUCAG	439			GCCGUUAGGC			
2746	UUCUUGAU C UCAGAGAC	440			GCCGUUAGGC			
2748	CUUGAUCU C AGAGACAA	441			GCCGUUAGGC			1
2759	AGACAAGU U CAAUGAAU	442	<u> </u>		GCCGUUAGGC			
2760	GACAAGUU C AAUGAAUC	443			GCCGUUAGGC			
2768	CAAUGAAU C UCUUCAAG	444	CUUGAAGA	CUGAUGAG	GCCGUUAGGC	CGAA	AUUCAUUG	2633

				0.1				
2770	AUGAAUCU C UUCAAGUG	445	CACUUGAA	CUGAUGAG	GCCGUUAGGC	CGAA	AGAUUCAU	2634
2772	GAAUCUCU U CAAGUGAA	446	UUCACUUG	CUGAUGAG	GCCGUUAGGC	CGAA	AGAGAUUC	2635
2773	AAUCUCUU C AAGUGAAU	447	AUUCACUU	CUGAUGAG	GCCGUUAGGC	CGAA	AAGAGAUU	2636
2782	AAGUGAAU A CUACUGCU	448	AGCAGUAG	CUGAUGAG	GCCGUUAGGC	CGAA	AUUCACUU	2637
2785	UGAAUACU A CUGCUCUC	449	GAGAGCAG	CUGAUGAG	GCCGUUAGGC	CGAA	AGUAUUCA	2638
2791	CUACUGCU C UCAUCCCA	450	UGGGAUGA	CUGAUGAG	GCCGUUAGGC	CGAA	AGCAGUAG	2639
2793	ACUGCUCU C AUCCCAAA	451	UUUGGGAU	CUGAUGAG	GCCGUUAGGC		AGAGCAGU	2640
2796	GCUCUCAU C CCAAAGGA	452	uccuuugg	CUGAUGAG	GCCGUUAGGC	CGAA	AUGAGAGC	2641
2813	AGCCAACU C UGAGGAAG	453			GCCGUUAGGC		AGUUGGCU	2642
2823	GAGGAAGU C UUUUUGUU	454			GCCGUUAGGC		ACUUCCUC	2643
2825	GGAAGUCU U UUUGUUUA	455	 		GCCGUUAGGC			2644
2826	GAAGUCUU U UUGUUUAA	456			GCCGUUAGGC		AAGACUUC	2645
2827	AAGUCUUU U UGUUUAAA	457			GCCGUUAGGC		AAAGACUU	
2828	AGUCUUUU U GUUUAAAC	458	 		GCCGUUAGGC		AAAAGACU	2647
2831	CUUUUUGU U UAAACCAG	459			GCCGUUAGGC		ACAAAAAG	2648
2832	UUUUUGUU U AAACCAGA	460	UCUGGUUU	CUGAUGAG	GCCGUUAGGC		AACAAAAA	2649
2833	UUUUGUUU A AACCAGAA	461	.		GCCGUUAGGC		AAACAAAA	2650
2847	GAAAACAU U ACUUUUGA	462	 		GCCGUUAGGC		AUGUUUUC	2651
2848	AAAACAUU A CUUUUGAA	462		·	GCCGUUAGGC		AAUGUUUU	2651
2851	ACAUUACU U UUGAAAAU	464			GCCGUUAGGC			
2852	CAUUACUU U UGAAAAUG	465	<u> </u>				AGUAAUGU	2653
					GCCGUUAGGC		AAGUAAUG	2654
2853	AUUACUUU U GAAAAUGG	466		CUGAUGAG			AAAGUAAU	2655
2869	GCACAGAU C UUUUCAUU	467			GCCGUUAGGC	···	AUCUGUGC	2656
2871	ACAGAUCU U UUCAUUGC	468			GCCGUUAGGC			2657
2872	CAGAUCUU U UCAUUGCU	469			GCCGUUAGGC		AAGAUCUG	2658
2873	AGAUCUUU U CAUUGCUA	470			GCCGUUAGGC		AAAGAUCU	2659
2874	GAUCUUUU C AUUGCUAU	471			GCCGUUAGGC		AAAAGAUC	2660
2877	CUUUUCAU U GCUAUUCA	472		CUGAUGAG			AUGAAAAG	2661
2881	UCAUUGCU A UUCAGGCU	473			GCCGUUAGGC			2662
2883	AUUGCUAU U CAGGCUGU	474			GCCGUUAGGC		AUAGCAAU	2663
2884	UUGCUAUU C AGGCUGUU	475			GCCGUUAGGC			2664
2892	CAGGCUGU U GAUAAGGU	476			GCCGUUAGGC		·	2665
2896	CUGUUGAU A AGGUCGAU	477		~	GCCGUUAGGC		AUCAACAG	2666
2901	GAUAAGGU C GAUCUGAA	478	UUCAGAUC	CUGAUGAG	GCCGUUAGGC	CGAA	ACCUUAUC	2667
2905	AGGUCGAU C UGAAAUCA	479	 		GCCGUUAGGC			2668
2912	UCUGAAAU C AGAAAUAU	480	AUAUUUCU	CUGAUGAG	GCCGUUAGGC	CGAA	AUUUCAGA	2669
2919	UCAGAAAU A UCCAACAU	481	AUGUUGGA	CUGAUGAG	GCCGUUAGGC	CGAA	AUUUCUGA	2670
2921	AGAAAUAU C CAACAUUG	482	1		GCCGUUAGGC			2671
2928	UCCAACAU U GCACGAGU	483	ACUCGUGC	CUGAUGAG	GCCGUUAGGC	CGAA	AUGUUGGA	2672
2937	GCACGAGU A UCUUUGUU	484			GCCGUUAGGC			
2939	ACGAGUAU C UUUGUUUA	485	UAAACAAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUACUCGU	2674
2941	GAGUAUCU U UGUUUAUU	486	AAUAAACA	CUGAUGAG	GCCGUUAGGC	CGAA	AGAUACUC	2675
2942	AGUAUCUU U GUUUAUUC	487	GAAUAAAC	CUGAUGAG	GCCGUUAGGC	CGAA	AAGAUACU	2676
2945	AUCUUUGU U UAUUCCUC	488	GAGGAAUA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAAAGAU	2677
2946	UCUUUGUU U AUUCCUCC	489	GGAGGAAU	CUGAUGAG	GCCGUUAGGC	CGAA	AACAAAGA	2678
2947	CUUUGUUU A UUCCUCCA	490	UGGAGGAA	CUGAUGAG	GCCGUUAGGC	CGAA	AAACAAAG	2679
2949	UUGUUUAU U CCUCCACA	491	UGUGGAGG	CUGAUGAG	GCCGUUAGGC	CGAA	AUAAACAA	2680
2950	UGUUUAUU C CUCCACAG	492			GCCGUUAGGC			2681
2953	UUAUUCCU C CACAGACU	493	AGUCUGUG	CUGAUGAG	GCCGUUAGGC	CGAA	AGGAAUAA	2682
2962	CACAGACU C CGCCAGAG	494			GCCGUUAGGC			
2977	AGACACCU A GUCCUGAU	495	+		GCCGUUAGGC			
2980	CACCUAGU C CUGAUGAA	496	+		GCCGUUAGGC			
2993	UGAAACGU C UGCUCCUU	497			GCCGUUAGGC			2686
2998	CGUCUGCU C CUUGUCCU	498			GCCGUUAGGC			
3001	CUGCUCCU U GUCCUAAU	499			GCCGUUAGGC			
3004	CUCCUUGU C CUAAUAUU	500			GCCGUUAGGC			
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3007	CUUGUCCU A AUAUUCAU	501	AUGAAUAU	CUGAUGAG	GCCGUUAGGC	CGAA	AGGACAAG	2690
3010	GUCCUAAU A UUCAUAUC	502	GAUAUGAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUUAGGAC	2691
3012	CCUAAUAU U CAUAUCAA	503	UUGAUAUG	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUUAGG	2692
3013	CUAAUAUU C AUAUCAAC	504	GUUGAUAU	CUGAUGAG	GCCGUUAGGC	CGAA	AAUAUUAG	2693
3016	AUAUUCAU A UCAACAGC	505	GCUGUUGA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGAAUAU	2694
3018	AUUCAUAU C AACAGCAC	506	GUGCUGUU	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUGAAU	2695
3030	AGCACCAU U CCUGGCAU	507	AUGCCAGG	CUGAUGAG	GCCGUUAGGC	CGAA	AUGGUGCU	2696
3031	GCACCAUU C CUGGCAUU	508	AAUGCCAG	CUGAUGAG	GCCGUUAGGC	CGAA	AAUGGUGC	2697
3039	CCUGGCAU U CACAUUUU	509	AAAAUGUG	CUGAUGAG	GCCGUUAGGC		AUGCCAGG	2698
3040	CUGGCAUU C ACAUUUUA	510	UAAAAUGU	CUGAUGAG			AAUGCCAG	2699
3045	AUUCACAU U UUAAAAAU	511	AUUUUUAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGUGAAU	2700
3046	UUCACAUU U UAAAAAUU	512	AUUUUUA	CUGAUGAG	GCCGUUAGGC			2701
3047	UCACAUUU U AAAAAUUA	513	UAAUUUUU	CUGAUGAG	GCCGUUAGGC	CGAA	AAAUGUGA	2702
3048	CACAUUUU A AAAAUUAU	514	 		GCCGUUAGGC		AAAAUGUG	2703
3054	UUAAAAAU U AUGUGGAA	515			GCCGUUAGGC		AUUUUUAA	2704
3055	UAAAAAUU A UGUGGAAG	516			GCCGUUAGGC		AUUUUUA	2705
3069	AAGUGGAU A GGAGAACU	517	<u> </u>				AUCCACUU	2706
3086	GCAGCUGU C AAUAGCCU	518			GCCGUUAGGC		ACAGCUGC	2707
3090	CUGUCAAU A GCCUAGGG	519			GCCGUUAGGC		AUUGACAG	2707
3095	AAUAGCCU A GGGCUGAA	520	UUCAGCCC		GCCGUUAGGC		AGGCUAUU	2709
3105	GGCUGAAU U UUUGUCAG	521			GCCGUUAGGC		AUUCAGCC	
3106	GCUGAAUU U UUGUCAGA	522		CUGAUGAG	GCCGUUAGGC		AAUUCAGC	2710
3107	CUGAAUUU U UGUCAGAU	523			GCCGUUAGGC			2711
3108	UGAAUUUU U GUCAGAUA				GCCGUUAGGC		AAAUUCAG	2712
		524					AAAAUUCA	2713
3111	AUUUUUGU C AGAUAAAU UGUCAGAU A AAUAAAAU	525	 	••••	GCCGUUAGGC		ACAAAAAU	2714
		526		·	GCCGUUAGGC		AUCUGACA	2715
3120	AGAUAAAU A AAAUAAAU	527			GCCGUUAGGC		AUUUAUCU	2716
	AAUAAAAU A AAUCAUUC	528					UUAUUUA	2717
3129	AAAUAAAU C AUUCAUCC	529			GCCGUUAGGC		DUUAUUU	2718
3132	UAAAUCAU U CAUCCUUU	530	 		GCCGUUAGGC		AUGAUUUA	2719
3133	AAAUCAUU C AUCCUUUU	531			GCCGUUAGGC		AAUGAUUU	2720
3136	UCAUUCAU C CUUUUUUU	532	AAAAAAAG		GCCGUUAGGC		AUGAAUGA	2721
3139	UUCAUCCU U UUUUUGAU	533			GCCGUUAGGC		AGGAUGAA	2722
3140	UCAUCCUU U UUUUGAUU	534			GCCGUUAGGC	CGAA	AAGGAUGA	2723
3141	CAUCCUUU U UUUGAUUA	535			GCCGUUAGGC			2724
3142	AUCCUUUU U UUGAUUAU	536	——————————————————————————————————————		GCCGUUAGGC	CGAA		2725
3143	UCCUUUUU U UGAUUAUA	537				CGAA		2726
3144	CCUUUUUU U GAUUAUAA	538			GCCGUUAGGC			2727
	UUUUUGAU U AUAAAAUU	539			GCCGUUAGGC			
3149	UUUUGAUU A UAAAAUUU	540			GCCGUUAGGC			
3151	UUGAUUAU A AAAUUUUC	541			GCCGUUAGGC			
3156	UAUAAAAU U UUCUAAAA	542		******	GCCGUUAGGC			
3157	AUAAAAUU U UCUAAAAU	543			GCCGUUAGGC			
3158	UAAAAUUU U CUAAAAUG	544			GCCGUUAGGC			
3159	AAAAUUUU C UAAAAUGU	545			GCCGUUAGGC			
3161	AAUUUUCU A AAAUGUAU	546			GCCGUUAGGC			2735
3168	UAAAAUGU A UUUUAGAC	547	GUCUAAAA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUUUUA	2736
3170	AAAUGUAU U UUAGACUU	548	AAGUCUAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUACAUUU	2737
3260	AAAUGUAU U UUAGACUU	548	AAGUCUAA	CUGAUGAG	GCCGUUAGGC	CGAA	AUACAUUU	2737
3171	AAUGUAUU U UAGACUUC	549			GCCGUUAGGC			
3261	AAUGUAUU U UAGACUUC	549			GCCGUUAGGC			2738
3172	AUGUAUUU U AGACUUCC	550			GCCGUUAGGC			2739
3262	AUGUAUUU U AGACUUCC	550			GCCGUUAGGC			2739
3173	UGUAUUUU A GACUUCCU	551			GCCGUUAGGC			2740
3263	UGUAUUUU A GACUUCCU	551			GCCGUUAGGC			2740
3178	UUUAGACU U CCUGUAGG	552			GCCGUUAGGC			2741
			•					

3268	UUUAGACU U CCUGUAGG	552	CCUACAGG	CUGAUGAG	GCCGUUAGGC	CGAA	AGUCUAAA	2741
3179	UUAGACUU C CUGUAGGG	553	CCCUACAG	CUGAUGAG	GCCGUUAGGC	CGAA	AAGUCUAA	2742
3269	UUAGACUU C CUGUAGGG	553	CCCUACAG	CUGAUGAG	GCCGUUAGGC	CGAA	AAGUCUAA	2742
3184	CUUCCUGU A GGGGGCGA	554	UCGCCCCC	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGGAAG	2743
3274	CUUCCUGU A GGGGGCGA	554	UCGCCCCC	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGGAAG	2743
3194	GGGGCGAU A UACUAAAU	555	AUUUAGUA	CUGAUGAG	GCCGUUAGGC	CGAA	AUCGCCCC	2744
3247	GGGGCGAU A UACUAAAU	555	AUUUAGUA	CUGAUGAG	GCCGUUAGGC	CGAA	AUCGCCCC	2744
3196	GGCGAUAU A CUAAAUGU	556	ACAUUUAG	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUCGCC	2745
3249	GGCGAUAU A CUAAAUGU	556	ACAUUUAG	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUCGCC	2745
3199	GAUAUACU A AAUGUAUA	557	UAUACAUU	CUGAUGAG	GCCGUUAGGC	CGAA	AGUAUAUC	2746
3205	CUAAAUGU A UAUAGUAC	558	GUACUAUA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUUUAG	2747
3207	AAAUGUAU A UAGUACAU	559	AUGUACUA	CUGAUGAG	GCCGUUAGGC	CGAA	AUACAUUU	2748
3209	AUGUAUAU A GUACAUUU	560	AAAUGUAC	CUGAUGAG	GCCGUUAGGC	CGAA	AUAUACAU	2749
3212	UAUAUAGU A CAUUUAUA	561	UAUAAAUG	CUGAUGAG	GCCGUUAGGC	CGAA	ACUAUAUA	2750
3216	UAGUACAU U UAUACUAA	562	UUAGUAUA	CUGAUGAG	GCCGUUAGGC	CGAA	AUGUACUA	2751
3217	AGUACAUU U AUACUAAA	563	UUUAGUAU	CUGAUGAG	GCCGUUAGGC	CGAA	AAUGUACU	2752
3218	GUACAUUU A UACUAAAU	564	AUUUAGUA	CUGAUGAG	GCCGUUAGGC	CGAA	AAAUGUAC	2753
3220	ACAUUUAU A CUAAAUGU	565	ACAUUUAG	CUGAUGAG	GCCGUUAGGC	CGAA	AUAAAUGU	2754
3223	UUUAUACU A AAUGUAUU	566	AAUACAUU	CUGAUGAG	GCCGUUAGGC	CGAA	AGUAUAAA	2755
3229	CUAAAUGU A UUCCUGUA	567	UACAGGAA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUUUAG	2756
3231	AAAUGUAU U CCUGUAGG	568	CCUACAGG	CUGAUGAG	GCCGUUAGGC	CGAA	AUACAUUU	2757
3232	AAUGUAUU C CUGUAGGG	569	CCCUACAG	CUGAUGAG	GCCGUUAGGC	CGAA	AAUACAUU	2758
3237	AUUCCUGU A GGGGGCGA	570	UCGCCCCC	CUGAUGAG	GCCGUUAGGC	CGAA	ACAGGAAU	2759
3252	GAUAUACU A AAUGUAUU	571	AAUACAUU	CUGAUGAG	GCCGUUAGGC	CGAA	AGUAUAUC	2760
3258	CUAAAUGU A UUUUAGAC	572	GUCUAAAA	CUGAUGAG	GCCGUUAGGC	CGAA	ACAUUUAG	2761
3284	GGGGCGAU A AAAUAAAA	573	UUUAUUU	CUGAUGAG	GCCGUUAGGC	CGAA	AUCGCCCC	2762
3289	GAUAAAAU A AAAUGCUA	574	UAGCAUUU	CUGAUGAG	GCCGUUAGGC	CGAA	AUUUUAUC	2763
3297	AAAAUGCU A AACAACUG	575	CAGUUGUU	CUGAUGAG	GCCGUUAGGC	CGAA	AGCAUUUU	2764

Input Sequence = NM_001285. Cut Site = UH/.

Arm Length = 8. Core Sequence = CUGAUGAG GCCGUUAGGC CGAA

Underlined region can be any X sequence or linker, as described herein.

NM_001285 (Homo sapiens chloride channel, calcium activated, 1 (CLCA1)

mRNA, 3311 bp)

Pos Substrate Seq ID	Substrate	Sed ID	Inozyme	RZ
		No.	•	Seq ID
10	GCUAAUGC U UUUGGUAC	576	GUACCAAA CUGAUGAG GCCGUUAGGC CGAA ICAUUAGC	10
19	UUUGGUAC A AAUGGAUG	577	CAUCCAUU CUGAUGAG GCCGUUAGGC CGAA IUACCAAA	AAA 2766
50	AUAUUUUC U UGUUUAAG	278	CUUAAACA CUGAUGAG GCCGUUAGGC CGAA IAAAAUAU	
65	AGGGGAGC A UGAAGAGG	579	CCUCUUCA CUGAUGAG GCCGUUAGGC CGAA ICUCCCCU	CCU 2768
89	GUUAUGUC A AGCAUCUG	280	CAGAUGCU CUGAUGAG GCCGUUAGGC CGAA IACAUAAC	1AC 2769
93	UGUCAAGC A UCUGGCAC	581	GUGCCAGA CUGAUGAG GCCGUUAGGC CGAA ICUUGACA	
96	CAAGCAUC U GGCACAGC	582	GCUGUGCC CUGAUGAG GCCGUUAGGC CGAA IAUGCUUG	
100	CAUCUGGC A CAGCUGAA	583	UUCAGCUG CUGAUGAG GCCGUUAGGC CGAA ICCAGAUG	
102	UCUGGCAC A GCUGAAGG	584	CCUUCAGC CUGAUGAG GCCGUUAGGC CGAA IUGCCAGA	
105		585	CUGCCUUC CUGAUGAG GCCGUUAGGC CGAA ICUGUGCC	3CC 2774
112	CUGAAGGC A GAUGGAAA	586	UUUCCAUC CUGAUGAG GCCGUUAGGC CGAA ICCUUCAG	3AG 2775
128	AUAUUUAC A AGUACGCA	587	UGCGUACU CUGAUGAG GCCGUUAGGC CGAA IUAAAUAU	
136	AAGUACGC A AUUUGAGA	588	UCUCAAAU CUGAUGAG GCCGUUAGGC CGAA ICGUACUU	JUU 2777
146	UUUGAGAC U AAGAUAUU	589	AAUAUCUU CUGAUGAG GCCGUUAGGC CGAA IUCUCAAA	AAA 2778
191	UUGUUAUC A UUCUCCUA	590	UAGGAGAA CUGAUGAG GCCGUUAGGC CGAA IAUAACAA	AA 2779
165	UAUCAUUC U CCUAUUGA	591	UCAAUAGG CUGAUGAG GCCGUUAGGC CGAA IAAUGAUA	UA 2780
167	UCAUUCUC C UAUUGAAG	592	CUUCAAUA CUGAUGAG GCCGUUAGGC CGAA IAGAAUGA	JGA 2781
168	Þ	593	UCUUCAAU CUGAUGAG GCCGUUAGGC CGAA IGAGAAUG	
178	Ø	594	AUUGCUCU CUGAUGAG GCCGUUAGGC CGAA IUCUUCAA	AA 2783
184		595	UNUACUAU CUGAUGAG GCCGUUAGGC CGAA ICUCUUGU	IGU 2784
195	⋖	596	ACCUGAUG CUGAUGAG GCCGUUAGGC CGAA IUUUUACU	CU 2785
197		597	UGACCUGA CUGAUGAG GCCGUUAGGC CGAA IUGUUUUA	UA 2786
200	⋖	598	CCCUGACC CUGAUGAG GCCGUUAGGC CGAA IAUGUGUU	TUU 2787
205	4	599	UAACCCCC CUGAUGAG GCCGUUAGGC CGAA IACCUGAU	
219	บ	009	UNAUCACA CUGAUGAG GCCGUUAGGC CGAA IUCUUUAA	
220	UAAAGACC U GUGAUAAA	601	UNUAUCAC CUGAUGAG GCCGUUAGGC CGAA IGUCUUUA	UA 2790
230	UGAUAAAC C ACUUCCGA	602	UCGGAAGU CUGAUGAG GCCGUUAGGC CGAA IUUUAUCA	CA 2791
231	GAUAAACC A CUUCCGAU	603	AUCGGAAG CUGAUGAG GCCGUUAGGC CGAA IGUUUAUC	.UC 2792
233	UAAACCAC U UCCGAUAA	604	UNAUCGGA CUGAUGAG GCCGUUAGGC CGAA IUGGUUUA	UA 2793
236	ACCACUUC C GAUAAGUU	605	AACUVAUC CUGAUGAG GCCGUVAGGC CGAA IAAGUGGU	GU 2794

2 T R	CGIICHIGH H AHAIMHIC	909	GAAAAHAH CHGAHGAG GCCGUUAGGC CGAA IACACACG	CG 2795
267	A	607	CUGAUGAG GCCGUUAGGC CGAA	AU 2796
272	UUCAUAUC U GUAUAUAU	809	AUAUAUAC CUGAUGAG GCCGUUAGGC CGAA IAUAUGAA	AA 2797
299	AGAAAGAC A CCUUCGUA	609	UACGAAGG CUGAUGAG GCCGUUAGGC CGAA IUCUUUCU	CU 2798
301	AAAGACAC C UUCGUAAC	610	GUUACGAA CUGAUGAG GCCGUUAGGC CGAA IUGUCUUU	UU 2799
302	AAGACACC U UCGUAACC	611	GGUUACGA CUGAUGAG GCCGUUAGGC CGAA IGUGUCUU	UU 2800
310	UUCGUAAC C CGCAUUUU	612	AAAAUGCG CUGAUGAG GCCGUUAGGC CGAA IUUACGAA	AA 2801
311	UCGUAACC C GCAUUUUC	613	GAAAAUGC CUGAUGAG GCCGUUAGGC CGAA IGUUACGA	GA 2802
314	UAACCCGC A UUUUCCAA	614	UUGGAAAA CUGAUGAG GCCGUUAGGC CGAA ICGGGUUA	UA 2803
320	GCAUUUUC C AAAGAGAG	615	CUCUCUUU CUGAUGAG GCCGUUAGGC CGAA IAAAAUGC	GC 2804
321	CAUUUUCC A AAGAGAGG	616	CCUCUCUU CUGAUGAG GCCGUUAGGC CGAA IGAAAAUG	UG 2805
334	GAGGAAUC A CAGGGAGA	617	UCUCCCUG CUGAUGAG GCCGUUAGGC CGAA IAUUCCUC	UC 2806
336	GGAAUCAC A GGGAGAUG	618	CAUCUCCC CUGAUGAG GCCGUUAGGC CGAA IUGAUUCC	CC 2807
348	AGAUGUAC A GCAAUGGG	619	CCCAUUGC CUGAUGAG GCCGUUAGGC CGAA IUACAUCU	CU 2808
351	UGUACAGC A AUGGGGCC	620	GGCCCCAU CUGAUGAG GCCGUUAGGC CGAA ICUGUACA	CA 2809
359	AAUGGGGC C AUUUAAGA	621	UCUUAAAU CUGAUGAG GCCGUUAGGC CGAA ICCCCAUU	UU 2810
360	AUGGGGCC A UUUAAGAG	622	CUCUUAAA CUGAUGAG GCCGUUAGGC CGAA IGCCCCAU	AU 2811
372	AAGAGUUC U GUGUUCAU	623	AUGAACAC CUGAUGAG GCCGUUAGGC CGAA IAACUCUU	UU 2812
379	CUGUGUUC A UCUUGAUU	624	AAUCAAGA CUGAUGAG GCCGUUAGGC CGAA IAACACAG	AG 2813
382	UGUUCAUC U UGAUUCUU	625	AAGAAUCA CUGAUGAG GCCGUUAGGC CGAA IAUGAACA	CA 2814
389	CUUGAUUC U UCACCUUC	626	GAAGGUGA CUGAUGAG GCCGUUAGGC CGAA IAAUCAAG	AG 2815
392	GAUUCUUC A CCUUCUAG	627	CUAGAAGG CUGAUGAG GCCGUUAGGC CGAA IAAGAAUC	UC 2816
394	UUCUUCAC C UUCUAGAA	628	UUCUAGAA CUGAUGAG GCCGUUAGGC CGAA IUGAAGAA	AA 2817
395	UCUUCACC U UCUAGAAG	629	CUUCUAGA CUGAUGAG GCCGUUAGGC CGAA IGUGAAGA	GA 2818
398	UCACCUUC U AGAAGGGG	630	CCCCUUCU CUGAUGAG GCCGUUAGGC CGAA IAAGGUGA	GA 2819
408	GAAGGGG C CUGAGUAA	631	UNACUCAG CUGAUGAG GCCGUUAGGC CGAA ICCCCUUC	UC 2820
409	AAGGGGCC C UGAGUAAU	632	AUUACUCA CUGAUGAG GCCGUUAGGC CGAA IGCCCCUU	UU 2821
410	AGGGCCC U GAGUAAUU	633	AAUUACUC CUGAUGAG GCCGUUAGGC CGAA IGGCCCCU	
420	AGUAAUUC A CUCAUUCA	634	UGAAUGAG CUGAUGAG GCCGUUAGGC CGAA IAAUUACU	CU 2823
422	UAAUUCAC U CAUUCAGC	635	GCUGAAUG CUGAUGAG GCCGUUAGGC CGAA IUGAAUUA	
424	AUUCACUC A UUCAGCUG	989	CAGCUGAA CUGAUGAG GCCGUUAGGC CGAA IAGUGAAU	AU 2825
428	ACUCAUUC A GCUGAACA	637	UGUUCAGC CUGAUGAG GCCGUUAGGC CGAA IAAUGAGU	
431	CAUUCAGC U GAACAACA	638	UGUUGUUC CUGAUGAG GCCGUUAGGC CGAA ICUGAAUG	
436	AGCUGAAC A ACAAUGGC	639	GCCAUUGU CUGAUGAG GCCGUUAGGC CGAA IUUCAGCU	CU 2828

439	UGAACAAC A AUGGCUAU	640	AUAGCCAU CUGAUGAG	JGAG GCCGUUAGGC	Į.	CGAA	IUUGUUCA	2829
445	ACAAUGGC U AUGAAGGC	641	GCCUUCAU CUGAUGAG	JGAG GCCGUUAGGC	l l	CGAA	ICCAUUGU	2830
454	AUGAAGGC A UUGUCGUU	642	AACGACAA CUGAUGAG	JGAG GCCGUUAGGC		CGAA	ICCUUCAU	2831
465	GUCGUUGC A AUCGACCC	643	GGGUCGAU CUGAUGAG	JGAG GCCGUUAGGC		CGAA	ICAACGAC	2832
472	CAAUCGAC C CCAAUGUG	644	CACAUUGG CUGAUGAG	JGAG GCCGUUAGGC	•	CGAA	IUCGAUUG	2833
473	AAUCGACC C CAAUGUGC	645	GCACAUUG CUGAUGAG	JGAG GCCGUUAGGC	1	CGAA	IGUCGAUU	2834
474	AUCGACCC C AAUGUGCC	646	GGCACAUU CUGAUGAG	JGAG GCCGUUAGGC	1	CGAA	IGGUCGAU	2835
475	UCGACCCC A AUGUGCCA	647	UGGCACAU CUGAUGAG	JGAG GCCGUUAGGC	AGGC CC	CGAA	IGGGUCGA	2836
482	CAAUGUGC C AGAAGAUG	648	CAUCUUCU CUGAUGAG	JGAG GCCGUUAGGC	AGGC CC	CGAA	ICACAUUG	2837
483	AAUGUGCC A GAAGAUGA	649	UCAUCUUC CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IGCACAUU	2838
495	GAUGAAAC A CUCAUUCA	650	UGAAUGAG CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IUUUCAUC	2839
497	UGAAACAC U CAUUCAAC	651	GUUGAAUG CUGAUGAG	JGAG GCCGUUAGGC	Ł	CGAA	IUGUUUCA	2840
499	AAACACUC A UUCAACAA	652	UUGUUGAA CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IAGUGUUU	2841
503	ACUCAUUC A ACAAAUAA	653	UNAUTUGU CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IAAUGAGU	2842
206	CAUUCAAC A AAUAAAGG	654	CCUUNAUU CUGAUGAG	JGAG GCCGUUAGGC		3AA	CGAA IUUGAAUG	2843
517	UAAAGGAC A UGGUGACC	655	GGUCACCA CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IUCCUUUA	2844
525	AUGGUGAC C CAGGCAUC	959	GAUGCCUG CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IUCACCAU	2845
526	UGGUGACC C AGGCAUCU	657	AGAUGCCU CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IGUCACCA	2846
527	GGUGACCC A GGCAUCUC	658	GAGAUGCC CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IGGUCACC	2847
531	ACCCAGGC A UCUCUGUA	629	UACAGAGA CUGAUGAG	JGAG GCCGUUAGGC		CGAA	ICCNGGGN	2848
534	CAGGCAUC U CUGUAUCU	099	AGAUACAG CUGAUGAG	JGAG GCCGUUAGGC	AGGC CC	CGAA	IAUGCCUG	2849
536	GGCAUCUC U GUAUCUGU	661	ACAGAUAC CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IAGAUGCC	2850
542	UCUGUAUC U GUUUGAAG	662	CUUCAAAC CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IAUACAGA	2851
552	UUUGAAGC U ACAGGAAA	663	UUUCCUGU CUGAUGAG	JGAG GCCGUUAGGC		CGAA .	ICUUCAAA	2852
522	GAAGCUAC A GGAAAGCG	664	CGCUUUCC CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IUAGCUUC	2853
574	UUUAUUUC A AAAAUGUU	665	AACAUUUU CUGAUGAG	JGAG GCCGUUAGGC		CGAA :	IAAAUAAA	2854
585	AAUGUUGC C AUUUUGAU	999	AUCAAAAU CUGAUGAG	JGAG GCCGUUAGGC	BGGC CC	CGAA	ICAACAUU	2855
286	AUGUUGCC A UUUUGAUU	199	AAUCAAAA CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IGCAACAU	2856
596	UUUGAUUC C UGAAACAU	899	AUGUUUCA CUGAUGAG	JGAG GCCGUUAGGC		CGAA .	IAAUCAAA	2857
597	иосяписс и сямасяпс	699	CAUGUUUC CUGAUGAG	JGAG GCCGUUAGGC		CGAA]	IGAAUCAA	2858
603	CCUGAAAC A UGGAAGAC	670	GUCUUCCA CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IUUUCAGG	2859
612	UGGAAGAC A AAGGCUGA	671	UCAGCCUU CUGAUGAG	JGAG GCCGUUAGGC		CGAA	IUCUUCCA	2860
618	ACAAAGGC U GACUAUGU	672	ACAUAGUC CUGAUGAG GCCGUUAGGC CGAA ICCUUUGU	IGAG GCCGUU	GGC CC	AA	Iccunnan	2861
622	AGGCUGAC U AUGUGAGA	673	UCUCACAU CUGAUGAG GCCGUUAGGC	IGAG GCCGUU	GGC CC	AA	CGAA IUCAGCCU	2862

632	UGUGAGAC C AAAACUUG	674	CAAGUUUU CUGAUG	CUGAUGAG GCCGUUAGGC	CGAA	IUCUCACA	2863
633	GUGAGACC A AAACUUGA	675	UCAAGUUU CUGAUGAG	AG GCCGUUAGGC	CGAA	IGUCUCAC	2864
638	ACCAAAAC U UGAGACCU	9/9	AGGUCUCA CUGAUGAG	AG GCCGUUAGGC	CGAA	IUUUUGGU	2865
645	CUUGAGAC C UACAAAAA	677	UUUUUGUA CUGAUGAG	AG GCCGUUAGGC	CGAA	IUCUCAAG	2866
646	UUGAGACC U ACAAAAU	678	AUUUUUGU CUGAUGAG	AAG GCCGUUAGGC	CGAA	IGUCUCAA	2867
649	AGACCUAC A AAAAUGCU	619	AGCAUUUU CUGAUGAG	AG GCCGUUAGGC	CGAA	IUAGGUCU	2868
657	AAAAAUGC U GAUGUUCU	680	AGAACAUC CUGAUGAG	AG GCCGUUAGGC	CGAA	ICAUUUUU	2869
665	UGAUGUUC U GGUUGCUG	681	CAGCAACC CUGAUGAG	AG GCCGUUAGGC	CGAA	IAACAUCA	2870
672	CUGGUUGC U GAGUCUAC	682	GUAGACUC CUGAUGAG	AG GCCGUUAGGC	CGAA	ICAACCAG	2871
678	GCUGAGUC U ACUCCUCC	683	GGAGGAGU CUGAUGAG	AG GCCGUUAGGC	CGAA	IACUCAGC	2872
681	GAGUCUAC U CCUCCAGG	684	CCUGGAGG CUGAUGAG	AG GCCGUUAGGC	CGAA	IUAGACUC	2873
683	GUCUACUC C UCCAGGUA	685	UACCUGGA CUGAUGAG	AG GCCGUUAGGC	CGAA	IAGUAGAC	2874
684	UCUACUCC U CCAGGUAA	989	UVACCUGG CUGAUGAG	AG GCCGUUAGGC	CGAA	IGAGUAGA	2875
989	UACUCCUC C AGGUAAUG	687	CAUUACCU CUGAUGAG	AG GCCGUUAGGC	CGAA	IAGGAGUA	2876
687	ACUCCUCC A GGUAAUGA	889	UCAUUACC CUGAUGAG	AG GCCGUUAGGC	CGAA	IGAGGAGU	2877
701	UGAUGAAC C CUACACUG	689	CAGUGUAG CUGAUGAG	AG GCCGUUAGGC	CGAA	IUUCAUCA	2878
702	GAUGAACC C UACACUGA	069	UCAGUGUA CUGAUGAG	AG GCCGUUAGGC	CGAA	IGUUCAUC	2879
703	AUGAACCC U ACACUGAG	691	CUCAGUGU CUGAUGAG	AG GCCGUUAGGC	CGAA	IGGUUCAU	2880
206	AACCCUAC A CUGAGCAG	692	CUGCUCAG CUGAUGAG	AG GCCGUUAGGC	CGAA	IUAGGGUU	2881
708	CCCUACAC U GAGCAGAU	693	AUCUGCUC CUGAUGAG	AG GCCGUUAGGC	CGAA	IUGUAGGG	2882
713	CACUGAGC A GAUGGGCA	694	UGCCCAUC CUGAUGAG	AG GCCGUUAGGC	CGAA	ICUCAGUG	2883
721	AGAUGGGC A ACUGUGGA	695	UCCACAGU CUGAUGAG	AG GCCGUUAGGC	CGAA	ICCCAUCU	2884
724	UGGGCAAC U GUGGAGAG	969	CUCUCCAC CUGAUGAG	AG GCCGUUAGGC	CGAA	IUUGCCCA	2885
748	AAAGGAUC C ACCUCACU	697	AGUGAGGU CUGAUGAG	AG GCCGUUAGGC	CGAA	IAUCCUUU	2886
749	AAGGAUCC A CCUCACUC	698	GAGUGAGG CUGAUGAG	AG GCCGUUAGGC	CGAA	IGAUCCUU	2887
751	GGAUCCAC C UCACUCCU	669	AGGAGUGA CUGAUGAG	AG GCCGUUAGGC	CGAA	IUGGAUCC	2888
752	GAUCCACC U CACUCCUG	700	CAGGAGUG CUGAUGAG	AG GCCGUUAGGC	CGAA	IGUGGAUC	2889
754	UCCACCUC A CUCCUGAU	701	AUCAGGAG CUGAUGAG	AG GCCGUUAGGC	CGAA	IAGGUGGA	2890
756	Þ	702	AAAUCAGG CUGAUGAG	AG GCCGUUAGGC	CGAA	IUGAGGUG	2891
758	CCUCACUC C UGAUUUCA	703	UGAAAUCA CUGAUGAG	AG GCCGUUAGGC	CGAA	IAGUGAGG	2892
759	CUCACUCC U GAUUUCAU	704	AUGAAAUC CUGAUGAG	AG GCCGUUAGGC	CGAA	IGAGUGAG	2893
766	CUGAUUUC A UUGCAGGA	705	UCCUGCAA CUGAUGAG	AG GCCGUUAGGC	CGAA	IAAAUCAG	2894
771	UUCAUUGC A GGAAAAA	902	UNUUUUCC CUGAUGAG GCCGUUAGGC	AG GCCGUUAGGC	CGAA	CGAA ICAAUGAA	2895
786	AAGUUAGC U GAAUAUGG	707	CCAUAUUC CUGAUGAG GCCGUUAGGC	AG GCCGUUAGGC	CGAA	CGAA ICUAACUU	2896

797	AUAUGGAC C ACAAGGUA	708	UACCUUGU CUGAUGAG GCCGUUAGGC CGAA IUCCAUAU	2897
798	UAUGGACC A CAAGGUAA	709	UNACCUUG CUGAUGAG GCCGUUAGGC CGAA IGUCCAUA	2898
800	UGGACCAC A AGGUAAGG	710	CCUUACCU CUGAUGAG GCCGUUAGGC CGAA IUGGUCCA	2899
810	GGUAAGGC A UUUGUCCA	711	UGGACAAA CUGAUGAG GCCGUUAGGC CGAA ICCUUACC	2900
817	CAUTUGUC C AUGAGUGG	712	CCACUCAU CUGAUGAG GCCGUUAGGC CGAA IACAAAUG	2901
818	AUTUGUCC A UGAGUGGG	713	CCCACUCA CUGAUGAG GCCGUUAGGC CGAA IGACAAAU	2902
828	GAGUGGGC U CAUCUACG	714	CGUAGAUG CUGAUGAG GCCGUUAGGC CGAA ICCCACUC	2903
830	GUGGGCUC A UCUACGAU	715	AUCGUAGA CUGAUGAG GCCGUUAGGC CGAA IAGCCCAC	2904
833	GGCUCAUC U ACGAUGGG	716	CCCAUCGU CUGAUGAG GCCGUUAGGC CGAA IAUGAGCC	2905
859	ACGAGUAC A AUAAUGAU	717	AUCAUUAU CUGAUGAG GCCGUUAGGC CGAA IUACUCGU	2906
877	AGAAAUUC U ACUUAUCC	718	GGAUAAGU CUGAUGAG GCCGUUAGGC CGAA IAAUUUCU	2907
880	AAUUCUAC U UAUCCAAU	719	AUUGGAUA CUGAUGAG GCCGUUAGGC CGAA IUAGAAUU	2908
882	UACUUAUC C AAUGGAAG	720	CUUCCAUU CUGAUGAG GCCGUUAGGC CGAA IAUAAGUA	2909
886	ACUUAUCC A AUGGAAGA	721	UCUUCCAU CUGAUGAG GCCGUUAGGC CGAA IGAUAAGU	2910
899	AAGAAUAC A AGCAGUAA	722	UNACUGCU CUGAUGAG GCCGUUAGGC CGAA IUAUUCUU	2911
903	AUACAAGC A GUAAGAUG	723	CAUCUUAC CUGAUGAG GCCGUUAGGC CGAA ICUUGUAU	2912
915	AGAUGUUC A GCAGGUAU	724	AUACCUGC CUGAUGAG GCCGUUAGGC CGAA IAACAUCU	2913
918	UGUUCAGC A GGUAUUAC	725	GUAAUACC CUGAUGAG GCCGUUAGGC CGAA ICUGAACA	2914
927	GGUAUUAC U GGUACAAA	726	UUUGUACC CUGAUGAG GCCGUUAGGC CGAA IUAAUACC	2915
933	ACUGGUAC A AAUGUAGU	727	ACUACAUU CUGAUGAG GCCGUUAGGC CGAA IUACCAGU	2916
953	GAAGUGUC A GGGAGGCA	728	UGCCUCCC CUGAUGAG GCCGUUAGGC CGAA IACACUUC	2917
961	AGGGAGGC A GCUGUUAC	729	GUAACAGC CUGAUGAG GCCGUUAGGC CGAA ICCUCCCU	2918
964	GAGGCAGC U GUUACACC	730	GGUGUAAC CUGAUGAG GCCGUUAGGC CGAA ICUGCCUC	2919
970	GCUGUUAC A CCAAAAGA	731	UCUUUUGG CUGAUGAG GCCGUUAGGC CGAA IUAACAGC	2920
972	UGUUACAC C AAAAGAUG	732	CAUCUUUU CUGAUGAG GCCGUUAGGC CGAA IUGUAACA	2921
973	GUUACACC A AAAGAUGC	733	GCAUCUUU CUGAUGAG GCCGUUAGGC CGAA IGUGUAAC	2922
982	AAAGAUGC A CAUUCAAU	734	AUUGAAUG CUGAUGAG GCCGUUAGGC CGAA ICAUCUUU	2923
984	AGAUGCAC A UUCAAUAA	735	UNAUUGAA CUGAUGAG GCCGUUAGGC CGAA IUGCAUCU	2924
988	GCACAUUC A AUAAAGUU	736	AACUUUAU CUGAUGAG GCCGUUAGGC CGAA IAAUGUGC	2925
666	AAAGUUAC A GGACUCUA	737	UAGAGUCC CUGAUGAG GCCGUUAGGC CGAA IUAACUUU	2926
1004	UACAGGAC U CUAUGAAA	738	UUUCAUAG CUGAUGAG GCCGUUAGGC CGAA IUCCUGUA	2927
1006		739	UUUUUCAU CUGAUGAG GCCGUUAGGC CGAA IAGUCCUG	2928
1031	GUUUGUUC U	740	GGGAUUGG CUGAUGAG GCCGUUAGGC CGAA IAACAAAC	2929
1033	UUGUUCUC C AAUCCCGC	741	GCGGGAUU CUGAUGAG GCCGUUAGGC CGAA IAGAACAA	2930

1038 CUCCAAUC C CGCCAGAC 743 GUCUGGGG CUGAUGAG CGAUUGGG C CGAUUGGG CGAUUGGG <th< th=""><th>1034</th><th>UGUUCUCC A AUCCCGCC</th><th>742</th><th>CGCGGGAU C</th><th>CUGAUGAG</th><th>GCCGUUAGGC</th><th>CGAA</th><th>IGAGAACA</th><th>2931</th></th<>	1034	UGUUCUCC A AUCCCGCC	742	CGCGGGAU C	CUGAUGAG	GCCGUUAGGC	CGAA	IGAGAACA	2931
UCCAAUCC C GCCAGAGG 744 CGUCUGGC CUCAAUCG C GCCGUUAGGG AAUCCCGC C AGACGGAGA 745 CUCCGUC CUGAUGAG GCCGUUAGGC AUCCCGC C AGACGGAGA 746 UCUCCGUC CUGAUGAG GCCGUUAGGC GAGAAGGC U UCUAUDAU 748 ACACAUGU 748 ACACAUGAG GCCGUUAGGC AAGGCUC U AUAAUGUU 750 ACAUGUUG CCGCUUAGGC GUCCGUUAGGC AUGUUUGCA A AAGACAAA 751 AAUCAACA CUGAUGAG GCCGUUAGGC UUCAACUA U AUAGUUGA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUCAACUA U AUAGUUGA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUCAACUA U GUACAGAA 753 UUCUGUUC CUGAUGAG GCCGUUAGGC UUCAGAAC A AAACAAAA 755 UUUGUUC CUGAUGAG GCCGUUAGGC ACAAAAAC A AAACAAAA 750 UUUGUUC CUGAUGAG GCCGUUAGGC ACAAAAACA A AAACAAAA 760 UUCUUUUU	38	ນ	743			GCCGUUAGGC	CGAA	IAUUGGAG	2932
AAUCCCGC A GAGGGAGA 745 CUCCGUCU CUGAUGAG GCCGUUAGGG AUCCCGCC A GACGGAGA 746 UCUCCGUC CUGAUGAG GCCGUUAGGG GAGAAGGC U UCUALDAN 747 AUTAUAGA GCGUUAGGG AAGGCUUC U AUAGUUAG TS AUACACACA GCGCUUAGGG AUGUUGCAC A ACAGUUG 751 AAUCAACA CCGGUUAGGG GUUUGCAC A ACAGUUG 752 UCAACUAG GCCGUUAGGG GUUUGCAC A ACAGUUG 753 UUUUGUUAC CUGAUGAG GCCGUUAGGG UUCUGUAC A GAACAAAA 754 UUUUGUUC CUGAUGAG GCCGUUAGGG UUCUGUAC A AAACAACA TOUUGUUC CUGAUGAG GCCGUUAGGG ACAACAAAC A AAACAACA 754 UUUGUUGU CUGAUGAG GCCGUUAGGG ACAACAAC A CAACAACA 755 UUUGUUGU CUGAUGAG GCCGUUAGGG ACAACAAC A CAACAACA 750 UUUGUUGU CUGAUGAG GCCGUUAGGG ACAAAACC A CAAAAACA 761 <td>39</td> <td>ບ</td> <td>744</td> <td>1</td> <td></td> <td>GCCGUUAGGC</td> <td>CGAA</td> <td>IGAUUGGA</td> <td>2933</td>	39	ບ	744	1		GCCGUUAGGC	CGAA	IGAUUGGA	2933
AUCCGGCC A GAGGAGA 746 UCUCCGUC CUCANDADA GAGAAGGC U UCUANDADA 747 AUTAUTAGA COGAUGAGG GAGAAGGC U UCUANDADA 747 AUTAUTAGA COGAUGAGG GAGACUCC U AUGAUGA GCCCUUAGGC COCAUDAGGG GUUUGCAC A ACAUGUG CUGAUGAG GCCCGUUAGGC GUUUGCAC A ACAUGUG CUGAUGAG GCCGUUAGGC GUUUGCAC A ACAUGUG CUGAUGAG GCCGUUAGGC GUUUGAUUC U UUGAAUUC U GAACAAAA 753 UUCUGUAC GCCGUUAGGC UUCGAAAC A GAACAAAA 754 UUUGUUGU CUGAUGAG GCCGUUAGGC UUCGAAAC A AAACAACA 755 UUUGUUGU CUGAUGAG GCCGUUAGGC AAAACAAC A ACAAAAAC A ACAAAAA 756 UUUGUUGU CUGAUGAG GCCGUUAGGC AAAACAAC A ACAAAAA 759 AGCUUGUU CUGAUGAG GCCGUUAGGC AAAACAAC A ACAAAAA 760 UUCUUGU CUGAUGAG GCCGUUAGGC A	042	ບ	745	_		GCCGUUAGGC	CGAA	ICGGGAUU	2934
GAGAAGGC U UCUAUAAU 747 AUUAUAGA CUGAUGAG GCCGUUAGGC AAGGCUUC U AUAAUGUU 748 AACAUUAU CUGAUGAG GCCGUUAGGC AUGUUUGCA C ACACAUGU 749 ACAUGUUG CUGAUGAG GCCGUUAGGC GUUGACAAC A UGUUGAUU 751 AAUCAUGU CUGAUGAG GCCGUUAGGC GUUGAUUCU C AUAGUGA 752 UCAACAUGU CUGAUGAG GCCGUUAGGC UUCAAAUCU U AUAGUGA 753 UUCAUGUAC C GCGUUAGGC UUCAGAAAC C ACAACAAA 754 UUUGUUC C UGAUGAG GCCGUUAGGC AACAAAAC C A CAACAAAA 754 UUUGUUC C UGAUGAG GCCGUUAGGC AACAAAAC A AAACACAA 756 UUUGUUG C UGAUGAG GCCGUUAGGC AACAAAAC A AACAAAA 757 UUUGUUG C CUGAUGAG GCCGUUAGGC AACAAAAC A AACAAAAA 759 AGCUUCUU C CUGAUGAG GCCGUUAGGC AACAAAAC A AACAAAAA 760 UUGUUUGU C CUGAUGAG GCCGUUAGGC AACAAAAC A AACAAGAA 762 UUCUUGUU C CUGAUGAG GCCGUUAGGC AACAAAAC A AACAAGAA 763 AUUUUGCU C CUGAUGAG GCCGUUAGGC AAAAGCUC A AACAAAAA 763 AUUUUGCU C CUGAUGAG GCCGUUAGGC AAAAAAAC A AAAAUCAAA 764 UUUGAUUUU C CUGAUGAG GCCGUUAGGC AAAAAAAG	043	Ą	746			GCCGUUAGGC	CGAA	IGCGGGAU	2935
AAGGCUUC U AUAAUGUU 748 AACAUUAU CUGAUGAG GCCGUUAGGC AUGUUUGCA C ACACAUGU 749 ACAUGUUG CUGAUGAG GCCGUUAGGC GUUGACACA A ACAUGUU 751 AAUCAACA CUGAUGAG GCCGUUAGGC GUUGAUUC U AUAGUUGA 751 AAUCAACA CUGAUGAG GCCGUUAGGC GUUGAAUUC U AUAGUGAA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUCAGAAAC A GAACAAAA 754 UUUGUUC CUGAUGAG GCCGUUAGGC UACAGAAA C ACAACAAA 756 UUUGUUU CUGAUGAG GCCGUUAGGC AACAAACC A CAACAAAA 756 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAAACCA A AAGAAGA A 756 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAAAACC A AAGAAGA A 750 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAAAAAC C AAACAAAAA 760 UUGUUUUG CUGAUGAG GCCGUUAGGC AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	056	GAGAAGGC U	747	1 1		GCCGUUAGGC	CGAA	ICCMMCMC	2936
AUGUNUGCA A CAACAUGU 750 ACAUGUUG CUGAUGAG GCCGUUAGGC GUUUGCAC A ACAUGUUG 750 CAACAUGU CUGAUGAG GCCGUUAGGC UGCACAAC A UGUUGAUU 751 AAUCAACA CUGAUGAG GCCGUUAGGC GUUGAAUUC U AUAGUUGA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUGAAUUC U GUACAAAA 753 UUCUGUAC CUGAUGAG GCCGUUAGGC UUCUGUAC A GAACAAAA 754 UUUUGUUC CUGAUGAG GCCGUUAGGC UACAAAAAC A AAACCACA 755 UCUGGUUU CUGAUGAG GCCGUUAGGC AAAACAAAC A AAACAAAA 756 UUGUUGUU CUGAUGAG GCCGUUAGGC AAAAACCAC A AAACAAAA 756 UUCUUUGUU CUGAUGAG GCCGUUAGGC AAAAACCAC A AAACAAAA 750 UUCUUUUU CUGAUGAG GCCGUUAGGC AAAAAAACCA A AAACAAAAA 760 UUCGUUUU CUGAUGAG GCCGUUAGGC AAAAAAAAC 761 GCUUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAAAAAAAA	059	AAGGCUUC U	748		UGAUGAG	GCCGUUAGGC	CGAA	IAAGCCUU	2937
GUUUGGAC A ACAUGUUG 750 CAACAUGU CGACGAUGG GUUUGGAUCA A ACAUGUUG 751 AAUCAACA CUGAUGAG GCCGUUAGGC GUUGAUUC U AUAGUUGA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUCGUACA A GAACAAAA 753 UUCUGUAC CUGAUGAG GCCGUUAGGC UACAGAAC A AAACCACA 755 UUUUGUUC CUGAUGAG GCCGUUAGGC AACAAAAC C A CAACAAAA 756 UUUUGUUC CUGAUGAG GCCGUUAGGC AAAACCACA A AAACAAGA 757 CUUUGUU CUGAUGAG GCCGUUAGGC AAAAACCAC A AAAAAAGC 760 UUGUUUG CUGAUGAG GCCGUUAGGC AAAAACAACA A AAAAAAGC 761 GCUUGUUU CUGAUGAG GCCGUUAGGC AAAAAAAACAACA A AAAAAAAA 760 UUCGUAUGA GCCGUUAGGC CAAACAAAAA 761 UUCGUAUGA GCCGUUAGGC AAAACAAACA A AAAAUCAA 763 AUUUGAUU CUGAUGAG GCCGUUAGGC GCAGUUAGG AAAACAACA A AAAAUCAA 765 UCCGAAGAA 766 UCCGAAGAA 766 UCCGAAGAA 768 UCCGAAGAA	071	А	749		UGAUGAG	GCCGUUAGGC	CGAA	ICAAACAU	2938
UGCACAAC A UGUUGAUU 751 AAUCAACA CUGAUGAG GCCGUUAGGC GUUGAUUC U AUAGUUGA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUCGAUUC U GUACAGAA 754 UUUUGUUC CUGAUGAG GCCGUUAGGC UUCUGUAC A GAACAAA 755 UUUUGUUC CUGAUGAG GCCGUUAGGC AACAAAAC A AAACCACA 756 UUUGUUUC CUGAUGAG GCCGUUAGGC AACAAAAC A AAAAGAA 757 CUUUGUUG CUGAUGAG GCCGUUAGGC AAAAACCAC A CAACAAA 759 UUCUUUGU CUGAUGAG GCCGUUAGGC AAAAACCAC A ACAAGAA 760 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAAGCAC C AACAAGAA 760 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAAGCAC C AACAAGAA 760 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAAGCAC A AAAAAGCA 762 UGCUUGUU CUGAUGAG GCCGUUAGGC AAAAAAAGC 762 UGCUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAAC 763 AUUUUGCU CUGAUGAG GCCGUUAGGC CUCCAAAAC 764 UUUGAUUUU CUGAUGAG GCCGUUAGGC GCAAAAACA 765 UGCAUUAGG GCCGUUAGGC AAAACAAC 764 UUUGAUUGCU CUGAUGAG GCCGUUAGGC GCAAAACA 765 UCCGAAGA G CCGCGCGCGCGCGCGCGCGCGCGCGCGCGC	073	Ą	750			GCCGUUAGGC	CGAA	IUGCAAAC	2939
GUUGAUUC U AUAGUUGA 752 UCAACUAU CUGAUGAG GCCGUUAGGC UUGAAUUC U GUACAGAA 753 UUCUGUAC CUGAUGAG GCCGUUAGGC UUCUGUAC CUGAUGAC GCCGUUAGGC UACAGAAC A AAACCACA 755 UGUGGUUU CUGAUGAG GCCGUUAGGC ACAAAAC A CAAAAAC 756 UUUGUUGU CUGAUGAG GCCGUUAGGC AAAACCAC A CAACAAAA 756 UUCUUUGU CUGAUGAG GCCGUUAGGC AAAAGAAC A AAGAAGCU 759 AGCUUCUU CUGAUGAG GCCGUUAGGC AAAGAACC C AAACAACA 760 UUGUUUGC CUGAUGAG GCCGUUAGGC AAAGAACC C AAACAACA 760 UUGUUUGC CUGAUGAG GCCGUUAGGC GAAGCUC C AAACAACA 760 UUGUUUGC CUGAUGAG GCCGUUAGGC GAAGCUC A AACAAGC 761 GCUUGUUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AGCAAAAU 763 AUUUUGCU CUGAUGAG GCCGUUAGGC CUCCAAAC A AACAAAC 762 UCCCUUGUUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AACAAAC 763 AUUUUGCU CUGAUGAG GCCGUUAGGC CUCCAAAC A AAACAAC 765 UCCGUUGUUU CUGAUGAG GCCGUUAGGC CUCCAAACA 766 UCCGACAUUUU CUGAUGAG GCCGUUAGGC AAAAACAC A AAACAAC 765 UCCGACAUUU CUGAUGAG GCCGUUAGGC AAAAACAC A AAAACACA 766 UCCGACAUU CUGAUGAG GCCGUUAGGC CUCCAAACA 768 UCCCCAUGAGG GCCGUUAGGC CCGAAGCA 768 UCCCCAAG CCGAAGCA 769 UCCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGGAAGCAC A UGGGAAGU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGGAAGCAC CUGAAGGAC CUGAUGAG GCCGUUAGGC CGGAAGCAC CUGAAGAAC CCGAAGCAC A UGGGAAGU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAAGAAC C GUGAUUCC CGAAGCAC CUGAAGCAC CUGAAGGAC CCGUUAGGAC CUGAAGAAC CCGUUAGGAC CCGUUAGGAC CCGUUAGGAC CCGUUAGAGC CCGUUAGAGC CCGAAGAAC CCGUUAGGAC CCGUUAGGAC CCGUUAGGAC CCGUUAGAGAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAGAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAGAC CUGAAGAAC CCGUUAGAACC CAGAAGAAC CCGCCAAACAAC A AAAACAAAC	076	UGCACAAC A	751			GCCGUUAGGC	CGAA	IUUGUGCA	2940
UVCUGUAC U GUACAGAA 753 UVCUGUAC CUGAUGAG GCCGUUAGGC UVCUGUAC A GAACAAAA 754 UUUUGUUC CUGAUGAG GCCGUUAGGC UACAGAAC A AAACCACA 755 UGUGGUUU CUGAUGAG GCCGUUAGGC AACAAAAC C ACAACAAA 756 UUGUUGU CUGAUGAG GCCGUUAGGC AAAAACCAC A AGAAAGA 759 AGCUUCUU CUGAUGAG GCCGUUAGGC AAAAACCAC A AAGAAGCA 760 UUGUUGU CUGAUGAG GCCGUUAGGC AAAAGAAC AAGAAGCA 760 UUGUUGU CUGAUGAG GCCGUUAGGC AAAAGAAC AAGAAGCA 760 UUGUUGU CUGAUGAG GCCGUUAGGC AAAAGAAC AACAAAGC 761 GCUUGUU CUGAUGAG GCCGUUAGGC AAAACAAC AACAAAGC 762 UGCUUGUU CUGAUGAG GCCGUUAGGC AAAACAAC AACAAAACA 763 AUUUGCU CUGAAGCUC AAAACAACA 764 UUGCAUGAG GCCGUUAGGC AAAAAAGC AAAAAACACA	980	D	752			GCCGUUAGGC	CGAA	IAAUCAAC	2941
UUCUGUAC A BAACAAAA 754 UUUUGUUC CUGAUGAG GCGGUUAGGC DACAAAAC A AAACCACA 755 UGUGGUUU CUGAUGAG GCGGUUAGGC AACAAAAC A ACAAAAC A ACAAAAC 756 UUUGUUG CUGAUGAG GCCGUUAGGC AAAAACCAC A ACAAAGAA 759 AGCUUCUU CUGAUGAG GCCGUUAGGC AAAGAAGC A AAGAAGCA 760 UUGUUUG CUGAUGAG GCCGUUAGGC AAAGAAGC A AAGAAACA 760 UUGUUUG CUGAUGAG GCCGUUAGGC AAAGAAGC 761 GCUUGUU CUGAUGAG GCCGUUAGGC AAAGAAGC AAAGAAGC 761 GCUUGUU CUGAUGAG GCCGUUAGGC GCCGUUAGGC AAACAAGC A AACAAACA 762 UCCUUGUU CUGAUGAG GCCGUUAGGC AAACAAGC A AAACAAGC 764 UUUGAUUU CUGAUGAG GCCGUUAGGC AAAAAUGC A AAAAAUGC A AAAAAAUGC A AAAAAAAA 765 UCCGAAGAA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	660	U	753			GCCGUUAGGC	CGAA	IAAUUCAA	2942
UACAGAAC A AAACCACA 755 UGUGGUUU CUGAUGAG GCCGUUAGGC AACAAAAC C ACAACAAA 756 UUUGUUGU CUGAUGAG GCCGUUAGGC ACAAAACCA A ACAAAGAA 758 UUCUUUGU CUGAUGAG GCCGUUAGGC AAAACCAC A AACAAAGA 760 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAGAAGC C AAACAACA 760 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAGAAGC C AAACAACA 760 UUGUUUGU CUGAUGAG GCCGUUAGGC AAAGAAGC C AAACAAGA 760 UUGUUUUU CUGAUGAG GCCGUUAGGC AAAGAAACC A AACAAAAC 761 GCUUGUU CUGAUGAG GCCGUUAGGC AAACAAAC A AACAAAA 761 GCUUGUU CUGAUGAG GCCGUUAGGC AAACAAAUC A AAAAUCAAA 762 UGCUUGUU CUGAUGAG GCCGUUAGGC AAACAAAUC A AAAAUCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC AAACAAAUC A AAAAUCAAA 766 UCGAGUUUG GCCGUUAGGC AAACAAAUC C GAAGCACA 768 UGCAUUUGG CUGAUGAG GCCGUUAGGC AAAAAAUC C GAAGCACA 768 UGCCUUCGG CUGAUGAG GCCGUUAGGC AAGCAAUC C CGAAGCAC 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC C GUGAUUCG CUGAUGAG GCCGUUAGGC CGAAGCAC C GUGAUUCG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC C GUGAUUCG CUGAUGAG GCCGUUAGGC CGGAAGCAC C GUGAUUCG CUGAUGAG GCCGUUAGGC CGGAAGCAC C GUGAUGAG GCCGUUAGGC AAGUGAUC C GAAGCACA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGGAAGCAC C GUGAUUCG CUGAUGAG GCCGUUAGGC AAGAGAAC C CUGAUGAG C CUGAUGAG GCCGUUAGGC CGGAAGCAC C AAGGAACA 771 AAGACCCC CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAUG AAGAAAAC C ACUCCUAUG C CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAUG AAGAAAAC C ACUCCUAUG C CAGAAAAAC C ACUCCUAUG C CAAAGAAAC C ACUCCUAUG C CAAAAAACC A CUCCUAUGAG CCGUUAGGC COGUUAGGC COGU	104	Æ	754		UGAUGAG	GCCGUUAGGC	CGAA	IUACAGAA	2943
AACAAACC A ACAACAAA 756 UUUGUUGU CUGAUGAG GCCGUUAGGC ACAAAACCA A ACAAAAGAA 757 CUUUGUUG CUGAUGAG GCCGUUAGGC AAAAACCAC A AAGAAGCU 759 AGCUUUCUU CUGAUGAG GCCGUUAGGC ACCACAAC A AAGAAGCU 759 AGCUUUCUU CUGAUGAG GCCGUUAGGC AAAGAAGC U 761 UUUGUUGUU CUGAUGAG GCCGUUAGGC AAAAGCUC C AAACAAGC 761 GCUUGUU CUGAUGAG GCCGUUAGGC GAAGCUCC A AACAAAGC 762 UGCUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AGCAAAAU 763 AUUUUGCU CUGAUGAG GCCGUUAGGC GCAAAAUCC A AAAAAAUGCA 764 UUUGAUUGU CUGAUGAG GCCGUUAGGC AAAAAAUGC A AAAAAAAUGC 765 UGCAUUCGG CUGAUGAG GCCGUUAGGC AAAAAAUGC A AUUCCCGAA 764 UUCCGAAGAU CUGAUGAG GCCGUUAGGC AAAAAAUGC A AUUCCCGAAG CUGAUGAG GCCGUUAGGC GCAAAUCUC C GAAGCACA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAAUCUC C GAAGCACA 769 UUCCCCAUG CUGAUGAG GCCGUUAGGC GCAAACCUC C GAGAGCACA 769 UUCCCCAAG CUGAUGAGC	109	Ø	755		UGAUGAG	GCCGUUAGGC	CGAA	IUUCUGUA	2944
ACAAAACC A CAACAAAG 757 CUUUGUUG CUGAUGAG GCCGUUAGGC AAAACCAAC A ACAAAGAA 758 UUCUUUGU CUGAUGAG GCCGUUAGGC AAAGAAGC U CCAAACAA 760 UUGUUUUU CUGAUGAG GCCGUUAGGC AAAGAACUC C AAACAAAC 761 GCUUGUUU CUGAUGAG GCCGUUAGGC GAAGCUC C AAACAAAC 762 UGCUUGUUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AACAAACA 763 AUUUGAUUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AAAUCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAUCAAA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC GCAAAAUC A AAAACAAC 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAACAAC 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAAUC A AAAACAAC 766 UCGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAAUC A AAAACAAC 767 UGCUUCGG CUGAUGAG GCCGUUAGGC AAAAAAUC C GAAGCACA 768 UGCGAUUCG CUGAUGAG GCCGUUAGGC CCGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGUGAUUC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CCGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CCGUGAAAC C CUGAAGAAC C CUGAUGAG GCCGUUAGGC CCGUGAAAC C CUGAAGAAC C CUGAUGAG GCCGUUAGGC CCGAAGAC A UUAAGAAA 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CCGAAGAC A UUAAGAAAC 771 AAGACCUC CUGAUGAG GCCGUUAGGC CCGAAAAAC C ACUCCUAU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CCGAAAAAC C ACUCCUAUAGAG C CUGAUGAGC CCGUUAGGC CCGAAAAAC C ACUCCUAUA 771 AAAACAACAC CUGAUGAG GCCGUUAGGC CCGAAAAAC C ACUCCUAUAGAG CCGUUAGAG CCGCUUAGAG CCGUUAGAG CCGUUAGAG CCGUUAGAG CCGUUAGAG CCGUUAGAG CCGUUAGAG CCGUUAGAGA CCGCUAGAGAG CCGUUAGAG CCGUUAGAG CCGUUAG	114	บ	756	nonconco	UGAUGAG	GCCGUUAGGC	CGAA	IUUUUGUU	2945
AAAACCAC A ACAAAGAA 758 UUCUUUGU CUGAUGAG GCCGUUAGGC ACCACAAC A AAGAAGCU 759 AGCUUCUU CUGAUGAG GCCGUUAGGC AAAGAAGC U CCAAACAA 760 UUGUUUGG CUGAUGAG GCCGUUAGGC AGAAGCUC C AAACAAGC 761 GCUUGUUU CUGAUGAG GCCGUUAGGC GAAGCUCC A AAAUCAAA 763 AUUUUGCU CUGAUGAG GCCGUUAGGC CUCCAAAC A AAAUCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAUCAAA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAUCCAA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAACAAUC A AAAAUGCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAAUGC A AAAGCAACA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AUGCAAUC C GAAGCACA 769 UGCGAUUCG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 775 CAUAGGAG CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 775 CAUAGGAG CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 775 CAUAGGAG CUGAUGAG GCCGUUAGGC CUGAAAACC A CUCCUAUG	115	А	757		UGAUGAG	GCCGUUAGGC	CGAA	IGUUUUGU	2946
ACCACAAC A AAGAAGCU 759 AGCUUCUU CUGAUGAG GCCGUUAGGC AAAGAAGC U CCAAACAA 760 UUGUUUGG CUGAUGAG GCCGUUAGGC AGAAGCUC C AAACAAGCA 761 GCUUGUUU CUGAUGAG GCCGUUAGGC GAAGCUCC A AACAAGCA 762 UGCUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AGCAAAAU 763 AUUUUGCU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAAUGCA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC GCAAAAUC A AAAAUGCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAACAAC A AUCUCCGA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AAGCAACC C GAAGCACA 767 UGCUUCG CUGAUGAG GCCGUUAGGC AUGCAAUC U CCGAAGCA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGAAGCAC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGAGGAUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AAGAAAACC A CUCCUAUG	117	Ø	758			GCCGUUAGGC	CGAA	IUGGUUUU	2947
AAAGAAGC U CCAAACAA 760 UUGUUUGG CUGAUGAG GCCGUUAGGC AGAAGCUC C AAACAAGC 761 GCUUGUUU CUGAUGAG GCCGUUAGGC GAAGCUCC A AACAAACA 762 UGCUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AGCAAAAU 763 AUUUUGCU CUGAUGAG GCCGUUAGGC GCAAAAUC A AAAUCCAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC GCAAAAUC A AAAAUGCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAUGC A AUCUCCAA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AAAAAUGC A AUCUCCAA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AAGUCCUC CUGAUGAG GCCGUUAGGC CGUGAAUC C GUGAUUCU 771 AAGUCCUC CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 773 AAGUCCUC CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 775 CAUAGGAG CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAUG 775 CAUAGGAG CUGAUGAG CCGUUAGGC	120	A	759			GCCGUUAGGC	CGAA	IUUGUGGU	2948
AGAAGCUC C AAACAAGC 761 GCUUGUU CUGAUGAG GCCGUUAGGC GAACCAAC 762 UGCUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAC 763 AUUUUGCU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAUCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC GCAAAAUGC A AAAAUGCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAUGC A AUCUCCCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AUGCAAUC U CCGAAGCA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAUCCC GAAGCACA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGUGAUGU C GUGAUUCU C GAAGCACC A UGGGAAGU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC CAUAAGAC C ACUCCUAUGAG CCGUUAGGC CUGAUGAG CCGUUAGGC CUGAUAGGC CUGAUGAG CCGUUAGGC CUGAUGAG CCGUUAGGC CUGAUAGGC CUGAUGAG CCGUUAGGC CCGUUAGGC CUGAUGAG CCGUUAGGC CUGAAAAACC A CUCCUAUGAG CCGUUAGGC CCGUUAGGC CUGAUGAG CCGUUAGGC CCGUUAGGC CUGAAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC CCGUUAGGC CUGAAAAACC A CUCCUAUGA CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CUGAAAAACC A CUCCUAUGA CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CUGAAAAACC A CUCCUAUGA CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CUGAAAACC A CUCCUAUGA CCGUUAGGC CCG	128	n	760			GCCGUUAGGC	CGAA	ICUUCUUU	2949
GAAGCUCC A AACAAGCA 762 UGCUUGUU CUGAUGAG GCCGUUAGGC CUCCAAAC A AGCAAAAU 763 AUUUUGCU CUGAUGAG GCCGUUAGGC AAACAAGC A AAAUCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC GCAAAAUGC A AAAAUGCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAUGC A AUCUCCGA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AACAAUC U CCGAAGCA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA 768 UGUGCUUC CUGAUGAG GCCGUUAGGC UCCGAAGC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAUG	130	บ	761		UGAUGAG	SCCGUUAGGC	CGAA	IAGCUUCU	2950
CUCCAAAC A AGCAAAAU 763 AUUUUGCU CUGAUGAG GCCGUUAGGC GCCAAAAUCCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC GCAAAAUCCA AAAUCCAA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAUGC A AUCUCCGA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AUGCAAUC U CCGAAGCA 767 UGCUUCG CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA 768 UGUGCUUC CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAGGAUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAUC U GAGGACUU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAAAC C ACUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC CUGAAAAAC C ACUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	131	Ø	762	UGCUUGUU CI	JGAUGAG	3CCGUUAGGC	CGAA	IGAGCUUC	2951
AAACAAGC A AAAUCAAA 764 UUUGAUUU CUGAUGAG GCCGUUAGGC GCAAAAUGCA 765 UGCAUUUU CUGAUGAG GCCGUUAGGC AAAAAUGCA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AUGCAAUC U CCGAAGCA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA 768 UGCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGAGGAUC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CUGAGGAUC U UAAGGACUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAAAC C ACUCCUAU 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAUG 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAAAC C ACUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC CAAAAAAC A CUCCUAUG	135	CUCCAAAC A AGCAAAAU	763	AUUUUGCU CI	UGAUGAG	SCCGUUAGGC	CGAA	IUUUGGAG	2952
GCAAAAUC A AAAAUGCA AAAAAUGC A AUCUCCGA AUGCAAUC U CCGAAGCA GCAAUCUC C GAAGCACA GCAAUCUC C GAAGCACA T69 UCCGAAGC A CGUGGAGAU CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA T69 UCCGAAGC A CGAGGAGA T70 ACUUCCCAUG CUGAUGAG CGAAGCAC A UGGGAAGU T71 AGAAACC C CUGAUGAG CGUGAUUC U GAGGACUU T71 AGAAUCAC CUGAUGAG CGUGAUUAGGC CGUGAUUC T72 AAGUCCUC CUGAUGAG CCGUUAGGC AAGUCAC AAGUCCUC CUGAUGAG GCCGUUAGGC AAGUCAUC AAGUCCUC CUGAUGAG CCGUUAGGC AAGAAAACC A CUCCUAUG T73 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAACC AAGAAAACC AAGAAAAACC CAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAG CCAUAGGAC CCAUAGGAG CCAUAGGAC CCAUAGGAG CCAUAGGAC CCAUAGGAC CCAUAGGAG CCAUAGGAC CCAUAGCAC CCAUAGCAC CCAUAGCAC CCAUAGCAC CCAUAGCAC CCAUAGCAC CCAUAGCAC CCAUAGCAC CCACAUAGCAC CCACAUAGCAC CCACAUAGCAC CCACAUAGCAC CCACAUAGCAC CCACAUACC CCACA	139	4	764	UUUGAUUU CI		3CCGUUAGGC	CGAA	Icondono	2953
AAAAAUGC A AUCUCCGA 766 UCGGAGAU CUGAUGAG GCCGUUAGGC AUGCAAUC U CCGAAGCA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA 768 UGUGCUUC CUGAUGAG GCCGUUAGGC UCCGAAGC A CAUGGGAA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC AAGUGAUC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAACC A CUCCUAUG 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AAGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	145	Æ	765			GCCGUUAGGC	CGAA	IAUUUUGC	2954
AUGCAAUC U CCGAAGCA 767 UGCUUCGG CUGAUGAG GCCGUUAGGC GCAAUCUC C GAAGCACA 768 UGUGCUUC CUGAUGAG GCCGUUAGGC UCCGAAGC A CAUGGGAA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC AAGUGAUC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 771 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	153	Æ	992	- 1		3CCGUUAGGC	CGAA	ICAUUUUU	2955
GCAAUCUC C GAAGCACA 768 UGUGCUUC CUGAUGAG GCCGUUAGGC UCCGAAGC A CAUGGGAAG 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC CGUGAUUC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	157	n	767	- 1			CGAA	IAUUGCAU	2956
UCCGAAGC A CAUGGGAA 769 UUCCCAUG CUGAUGAG GCCGUUAGGC CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC AAGUGAUC 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	159	บ	768	1	JGAUGAG	3CCGUUAGGC	CGAA	IAGAUUGC	2957
CGAAGCAC A UGGGAAGU 770 ACUUCCCA CUGAUGAG GCCGUUAGGC AAGUGAUC C GUGAUUCU 771 AGAAUCAC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	165	⋖	169		JGAUGAG	SCCGUUAGGC	CGAA	ICUUCGGA	2958
AAGUGAUUC U GAGGACUUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CGUGAUUC U GAGGACUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	167		770		JGAUGAG	SCCGUUAGGC	CGAA	IUGCUUCG	2959
CGUGAUUC U GAGGACUU 772 AAGUCCUC CUGAUGAG GCCGUUAGGC CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	180	บ	771			SCCGUUAGGC	CGAA	IAUCACUU	2960
CUGAGGAC U UUAAGAAA 773 UUUCUUAA CUGAUGAG GCCGUUAGGC AAGAAAAC C ACUCCUAU 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	188		772			1	CGAA	IAAUCACG	2961
AAGAAAAC C ACUCCUAUG 774 AUAGGAGU CUGAUGAG GCCGUUAGGC AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	195	- 1	773			SCCGUUAGGC	CGAA	IUCCUCAG	2962
AGAAAACC A CUCCUAUG 775 CAUAGGAG CUGAUGAG GCCGUUAGGC	907	U	774			SCCGUUAGGC	CGAA	IUUUUCUU	2963
	207	A	775	CAUAGGAG CL	JGAUGAG (CGAA	IGUUUUCU	2964

1209	AAAACCAC U CCUAUGAC	776	GUCAUAGG CUGAUGAG GCCGUUAGGC CGAA I	INGGNANA	2965
1211	AACCACUC C UAUGACAA	777	UUGUCAUA CUGAUGAG GCCGUUAGGC CGAA I.	IAGUGGUU	2966
1212	ACCACUCC U AUGACAAC	778	GUUGUCAU CUGAUGAG GCCGUUAGGC CGAA I	IGAGUGGU	2967
1218	CCUAUGAC A ACACAGCC	179	GGCUGUGU CUGAUGAG GCCGUUAGGC CGAA II	IUCAUAGG	2968
1221	AUGACAAC A CAGCCACC	780	GGUGGCUG CUGAUGAG GCCGUUAGGC CGAA II	IUUGUCAU	2969
1223	GACAACAC A GCCACCAA	781	UUGGUGGC CUGAUGAG GCCGUUAGGC CGAA II	IUGUUGUC	2970
1226	AACACAGC C ACCAAAUC	782	GAUUUGGU CUGAUGAG GCCGUUAGGC CGAA I	ICUGUGUU	2971
1227	ACACAGCC A CCAAAUCC	783	GGAUUUGG CUGAUGAG GCCGUUAGGC CGAA I	IGCUGUGU	2972
1229	ACAGCCAC C AAAUCCCA	784	UGGGAUUU CUGAUGAG GCCGUUAGGC CGAA II	IUGGCUGU	2973
1230	CAGCCACC A AAUCCCAC	785	GUGGGAUU CUGAUGAG GCCGUUAGGC CGAA I	IGUGGCUG	2974
1235	ACCAAAUC C CACCUUCU	984	AGAAGGUG CUGAUGAG GCCGUUAGGC CGAA I.	IAUUUGGU	2975
1236	CCAAAUCC C ACCUUCUC	787	GAGAAGGU CUGAUGAG GCCGUUAGGC CGAA I	IGAUUUGG	2976
1237	CAAAUCCC A CCUUCUCA	788	UGAGAAGG CUGAUGAG GCCGUUAGGC CGAA I	IGGAUUUG	2977
1239	AAUCCCAC C UUCUCAUU	789	AAUGAGAA CUGAUGAG GCCGUUAGGC CGAA II	IUGGGAUU	2978
1240	AUCCCACC U UCUCAUUG	190	CAAUGAGA CUGAUGAG GCCGUUAGGC CGAA I	IGUGGGAU	2979
1243	CCACCUUC U CAUUGCUG	161	CAGCAAUG CUGAUGAG GCCGUUAGGC CGAA I	IAAGGUGG	2980
1245	ACCUUCUC A UUGCUGCA	792	UGCAGCAA CUGAUGAG GCCGUUAGGC CGAA I	IAGAAGGU	2981
1250	CUCAUUGC U GCAGAUUG	793	CAAUCUGC CUGAUGAG GCCGUUAGGC CGAA I	ICAAUGAG	2982
1253	AUUGCUGC A GAUUGGAC	794	GUCCAAUC CUGAUGAG GCCGUUAGGC CGAA I	ICAGCAAU	2983
1262	GAUUGGAC A AAGAAUUG	795	CAAUUCUU CUGAUGAG GCCGUUAGGC CGAA II	IUCCAAUC	2984
1282	GUUUAGUC C UUGACAAA	964	UUUGUCAA CUGAUGAG GCCGUUAGGC CGAA II	IACUAAAC	2985
1283	UUUAGUCC U UGACAAAU	797	AUTUGUCA CUGAUGAG GCCGUUAGGC CGAA IO	IGACUAAA	2986
1288	UCCUUGAC A AAUCUGGA	198	UCCAGAUU CUGAUGAG GCCGUUAGGC CGAA II	IUCAAGGA	2987
1293	GACAAAUC U GGAAGCAU	799	AUGCUUCC CUGAUGAG GCCGUUAGGC CGAA II	IAUUUGUC	2988
1300	CUGGAAGC A UGGCGACU	800	AGUCGCCA CUGAUGAG GCCGUUAGGC CGAA IO	ICUUCCAG	2989
1308	AUGGCGAC U GGUAACCG	801	CGGUUACC CUGAUGAG GCCGUUAGGC CGAA II	IUCGCCAU	2990
1315	CUGGUAAC C GCCUCAAU	802	AUUGAGGC CUGAUGAG GCCGUUAGGC CGAA II	IUUACCAG	1667
1318	GUAACCGC C UCAAUCGA	803	UCGAUUGA CUGAUGAG GCCGUUAGGC CGAA IO	ICGGUUAC	2992
1319	UAACCGCC U CAAUCGAC	804	GUCGAUUG CUGAUGAG GCCGUUAGGC CGAA IO	IGCGGUUA	2993
1321	ACCGCCUC A AUCGACUG	805	CAGUCGAU CUGAUGAG GCCGUUAGGC CGAA II	IAGGCGGU	2994
1328	CAAUCGAC U GAAUCAAG	806	CUUGAUUC CUGAUGAG GCCGUUAGGC CGAA II	IUCGAUUG	2995
1334	ACUGAAUC A AGCAGGCC	807	GGCCUGCU CUGAUGAG GCCGUUAGGC CGAA II	IAUUCAGU	2996
1338	AAUCAAGC A GGCCAGCU	808	AGCUGGCC CUGAUGAG GCCGUUAGGC CGAA IO	ICUUGAUU	2997
1342	AAGCAGGC C AGCUUUUC	809	GAAAAGCU CUGAUGAG GCCGUUAGGC CGAA IC	CGAA ICCUGCUU	2998

1343	AGCAGGCC A GCUUUUCC	810	GGAAAAGC CI	CUGAUGAG	GCCGUUAGGC	CGAA	IGCCUGCU	2999
1346	AGGCCAGC U UUUCCUGC	811	GCAGGAAA CI	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGGCCU	3000
1351	AGCUUUUC C UGCUGCAG	812	CUGCAGCA CI	CUGAUGAG	GCCGUUAGGC	CGAA	IAAAAGCU	3001
1352	GCUUUUCC U GCUGCAGA	813	UCUGCAGC CT	CUGAUGAG	GCCGUUAGGC	CGAA	IGAAAAGC	3002
1355	UUUCCUGC U GCAGACAG	814	cnancnec cı	CUGAUGAG	GCCGUUAGGC	CGAA	ICAGGAAA	3003
1358	CCUGCUGC A GACAGUUG	815	CAACUGUC CT	CUGAUGAG	GCCGUUAGGC	CGAA	ICAGCAGG	3004
1362	CUGCAGAC A GUUGAGCU	816	AGCUCAAC CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUCUGCAG	3005
1370	AGUUGAGC U GGGGUCCU	817	AGGACCCC CT	CUGAUGAG	GCCGUUAGGC	CGAA	ICUCAACU	3006
1377	coeeeenc c oeeenoee	818	CCAACCCA CI	CUGAUGAG	GCCGUUAGGC	CGAA	IACCCCAG	3007
1378	ugggaaca u ggannggg	819	CCCAACCC CI	CUGAUGAG	GCCGUUAGGC	CGAA	IGACCCCA	3008
1395	AUGGUGAC A UUUGACAG	820	CUGUCAAA CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUCACCAU	3009
1402	CAUUUGAC A GUGCUGCC	821	GGCAGCAC CI	CUGAUGAG	gccgunyggc		CGAA IUCAAAUG	3010
1407	GACAGUGC U GCCCAUGU	822	ACAUGGGC CT	CUGAUGAG	gccgunyggc	CGAA	ICACUGUC	3011
1410	AGUGCUGC C CAUGUACA	823	UGUACAUG CI	CUGAUGAG	GCCGUUAGGC	CGAA	ICAGCACU	3012
1411	GUGCUGCC C AUGUACAA	824	UUGUACAU CI	CUGAUGAG	gccgunaggc	CGAA	IGCAGCAC	3013
1412	UGCUGCCC A UGUACAAA	825	UUUGUACA CI	CUGAUGAG	GCCGUUAGGC	CGAA	IGGCAGCA	3014
1418	CCAUGUAC A AAGUGAAC	826	GUUCACUU CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUACAUGG	3015
1427	AAGUGAAC U CAUACAGA	827	UCUGUAUG CT	CUGAUGAG	GCCGUUAGGC	CGAA	IUUCACUU	3016
1429	GUGAACUC A UACAGAUA	828	UAUCUGUA CI	CUGAUGAG	GCCGUUAGGC	CGAA	IAGUUCAC	3017
1433	ACUCAUAC A GAUAAACA	829	UGUUUAUC CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUAUGAGU	3018
1441	AGAUAAAC A GUGGCAGU	830	ACUGCCAC CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUUUAUCU	3019
1447	ACAGUGGC A GUGACAGG	831	CCUGUCAC CL	CUGAUGAG	GCCGUUAGGC	CGAA	ICCACUGU	3020
1453	GCAGUGAC A GGGACACA	832	nenenccc cı	CUGAUGAG	GCCGUUAGGC	CGAA	IUCACUGC	3021
1459	ACAGGGAC A CACUCGCC	833	GGCGAGUG CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUCCCUGU	3022
1461	AGGGACAC A CUCGCCAA	834	UUGGCGAG CI	CUGAUGAG	GCCGUUAGGC	CGAA	INGNCCCN	3023
1463	GGACACAC U CGCCAAAA	835	nnnneece cı	CUGAUGAG	GCCGUUAGGC	CGAA	INGNGNCC	3024
1467	ACACUCGC C AAAAGAUU	988	AAUCUUUU CI	CUGAUGAG	GCCGUUAGGC	CGAA	ICGAGUGU	3025
1468	CACUCGCC A AAAGAUUA	837	UAAUCUUU CI	CUGAUGAG	GCCGUUAGGC	CGAA	IGCGAGUG	3026
1478	AAGAUUAC C UGCAGCAG	838	CUGCUGCA CI	CUGAUGAG	GCCGUUAGGC	CGAA	IUAAUCUU	3027
1479	авалиасс и всавсавс	839	ecnecnec cr	CUGAUGAG	GCCGUUAGGC	CGAA	IGUAAUCU	3028
1482	UVACCUGC A GCAGCUUC	840	GAAGCUGC CL	CUGAUGAG	GCCGUUAGGC	CGAA	ICAGGUAA	3029
1485	CCUGCAGC A GCUUCAGG	841	CCUGAAGC CL	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGCAGG	3030
1488	GCAGCAGC U UCAGGAGG	842	CCUCCUGA CL	JGAUGAG	CCUCCUGA CUGAUGAG GCCGUUAGGC	CGAA	CGAA ICUGCUGC	3031
1491	GCAGCUUC A GGAGGGAC	843	enccence cr	JGAUGAG	GUCCCUCC CUGAUGAG GCCGUUAGGC CGAA IAAGCUGC	CGAA	IAAGCUGC	3032

1503	GGGACGUC C AUCUGCAG	844	CUGCAGAU CUGAUGAG GCCGUUAGGC CG	CGAA IACGUCCC	3033
1504	GGACGUCC A UCUGCAGC	845	GCUGCAGA CUGAUGAG GCCGUUAGGC CG	CGAA IGACGUCC	3034
1507	CGUCCAUC U GCAGCGGG	846	CCCGCUGC CUGAUGAG GCCGUUAGGC CG	CGAA IAUGGACG	3035
1510	CCAUCUGC A GCGGGCUU	847	AAGCCCGC CUGAUGAG GCCGUUAGGC CG	CGAA ICAGAUGG	3036
1517	CAGCGGGC U UCGAUCGG	848	CCGAUCGA CUGAUGAG GCCGUUAGGC CG	CGAA ICCCGCUG	3037
1527	CGAUCGGC A UUUACUGU	849	ACAGUAAA CUGAUGAG GCCGUUAGGC CG	CGAA ICCGAUCG	3038
1533	GCAUUUAC U GUGAUUAG	850	CUAAUCAC CUGAUGAG GCCGUUAGGC CG	CGAA IUAAAUGC	3039
1553	GAAAUAUC C AACUGAUG	851	CAUCAGUU CUGAUGAG GCCGUUAGGC CG	CGAA IAUAUUUC	3040
1554	AAAUAUCC A ACUGAUGG	852	ccaucagu cugaugag gccguuaggc cg	CGAA IGAUAUUU	3041
1557	UAUCCAAC U GAUGGAUC	853	GAUCCAUC CUGAUGAG GCCGUUAGGC CG	CGAA IUUGGAUA	3042
1566	GAUGGAUC U GAAAUUGU	854	ACAAUUUC CUGAUGAG GCCGUUAGGC CG	CGAA IAUCCAUC	3043
1577	AAUUGUGC U GCUGACGG	855	cceucage cugaugag geceunagge eg	CGAA ICACAAUU	3044
1580	UGUGCUGC U GACGGAUG	856	CAUCCGUC CUGAUGAG GCCGUUAGGC CG	CGAA ICAGCACA	3045
1597	GGGAAGAC A ACACUAUA	857	UAUAGUGU CUGAUGAG GCCGUUAGGC CG	CGAA IUCUUCCC	3046
1600	AAGACAAC A CUAUAAGU	858	ACUVAVAG CUGAUGAG GCCGUVAGGC CG	CGAA IUUGUCUU	3047
1602	GACAACAC U AUAAGUGG	859	CCACUUAU CUGAUGAG GCCGUUAGGC CG	CGAA IUGUUGUC	3048
1615	GUGGGUGC U UUAACGAG	860	CUCGUUAA CUGAUGAG GCCGUUAGGC CG	CGAA ICACCCAC	3049
1627	ACGAGGUC A AACAAAGU	861	ACUUUGUU CUGAUGAG GCCGUUAGGC CG	CGAA IACCUCGU	3050
1631	GGUCAAAC A AAGUGGUG	862	CACCACUU CUGAUGAG GCCGUUAGGC CG	CGAA IUUUGACC	3051
1641	AGUGGUGC C AUCAUCCA	863	UGGAUGAU CUGAUGAG GCCGUUAGGC CG	CGAA ICACCACU	3052
1642	GUGGUGCC A UCAUCCAC	864	GUGGAUGA CUGAUGAG GCCGUUAGGC CGAA IGCACCAC	AA IGCACCAC	3053
1645	GUGCCAUC A UCCACACA	865	UGUGUGGA CUGAUGAG GCCGUUAGGC CGAA	AA IAUGGCAC	3054
1648	CCAUCAUC C ACACAGUC	998	GACUGUGU CUGAUGAG GCCGUUAGGC CG	CGAA IAUGAUGG	3055
1649	CAUCAUCC A CACAGUCG	867	CGACUGUG CUGAUGAG GCCGUUAGGC CG	CGAA IGAUGAUG	3056
1651	UCAUCCAC A CAGUCGCU	898	AGCGACUG CUGAUGAG GCCGUUAGGC CG	CGAA IUGGAUGA	3057
1653	AUCCACAC A GUCGCUUU	698	AAAGCGAC CUGAUGAG GCCGUUAGGC CG	CGAA IUGUGGAU	3058
1659	ACAGUCGC U UUGGGGCC	870	GGCCCCAA CUGAUGAG GCCGUUAGGC CGAA ICGACUGU	AA ICGACUGU	3059
1667	UUUGGGGC C CUCUGCAG	871	CUGCAGAG CUGAUGAG GCCGUUAGGC CG	CGAA ICCCCAAA	3060
1668	UUGGGGCC C UCUGCAGC	872	GCUGCAGA CUGAUGAG GCCGUUAGGC CG	CGAA IGCCCCAA	3061
1669	UGGGGCCC U CUGCAGCU	873	AGCUGCAG CUGAUGAG GCCGUUAGGC CG	CGAA IGGCCCCA	3062
1671	GGGCCCUC U GCAGCUCA	874	UGAGCUGC CUGAUGAG GCCGUUAGGC CG	CGAA IAGGGCCC	3063
1674	CCCUCUGC A GCUCAAGA	875	UCUUGAGC CUGAUGAG GCCGUUAGGC CGAA	AA ICAGAGGG	3064
1677	UCUGCAGC U CAAGAACU	876	AGUUCUUG CUGAUGAG GCCGUUAGGC CGAA ICUGCAGA	AA ICUGCAGA	3065
1679	UGCAGCUC A AGAACUAG	877	CUAGUUCU CUGAUGAG GCCGUUAGGC CGAA IAGCUGCA	AA IAGCUGCA	3066

1685	UCAAGAAC U AGAGGAGC	878	GCUCCUCU CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IUUCUUGA	3067
1694	AGAGGAGC U GUCCAAAA	879	UUUUGGAC CUGAUGAG GCCGUUAGGC	UAGGC CGAA	ICACCACA	3068
1698	GAGCUGUC C AAAAUGAC	880	GUCAUUUU CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IACAGCUC	3069
1699	AGCUGUCC A AAAUGACA	881	UGUCAUUU CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IGACAGCU	3070
1707	AAAAUGAC A GGAGGUUU	882	AAACCUCC CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IUCAUUUU	3071
1718	AGGUUUAC A GACAUAUG	883	CAUAUGUC CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IUAAACCU	3072
1722	UNACAGAC A UAUGCUUC	884	GAAGCAUA CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IUCUGUAA	3073
1728	ACAUAUGC U UCAGAUCA	885	UGAUCUGA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	ICAUAUGU	3074
1731	UAUGCUUC A GAUCAAGU	886	ACUUGAUC CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAAGCAUA	3075
1736	UUCAGAUC A AGUUCAGA	887	UCUGAACU CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAUCUGAA	3076
1742	UCAAGUUC A GAACAAUG	888	CAUUGUUC CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IAACUUGA	3077
1747	UUCAGAAC A AUGGCCUC	688	GAGGCCAU CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IUUCUGAA	3078
1753	ACAAUGGC C UCAUUGAU	890	AUCAAUGA CUGAUGAG GCCGU	GCCGUUAGGC CGAA	ICCAUUGU	3079
1754	CAAUGGCC U CAUUGAUG	891	CAUCAAUG CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IGCCAUUG	3080
1756	AUGGCCUC A UUGAUGCU	892	AGCAUCAA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAGGCCAU	3081
1764	AUUGAUGC U UUUGGGGC	893	GCCCCAAA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	ICAUCAAU	3082
1773	UNUGGGGC C CUUUCAUC	894	GAUGAAAG CUGAUGAG GCCGU	GCCGUUAGGC CGAA	ICCCCAAA	3083
1774	UUGGGGCC C UUUCAUCA	895	UGAUGAAA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IGCCCCAA	3084
1775	UGGGGCCC U UUCAUCAG	896	CUGAUGAA CUGAUGAG GCCGUI	GCCGUUAGGC CGAA	IGGCCCCA	3085
1779	GCCCUUUC A UCAGGAAA	897	UUUCCUGA CUGAUGAG GCCGUI	GCCGUUAGGC CGAA	IAAAGGGC	3086
1782	CUUUCAUC A GGAAAUGG	868	CCAUUUCC CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAUGAAAG	3087
1794	AAUGGAGC U GUCUCUCA	899	UGAGAGAC CUGAUGAG GCCGUUAGGC	UAGGC CGAA	ICUCCAUU	3088
1798	GAGCUGUC U CUCAGCGC	900	GCGCUGAG CUGAUGAG GCCGU	GCCGUUAGGC CGAA	IACAGCUC	3089
1800	GCUGUCUC U CAGCGCUC	901	GAGCGCUG CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAGACAGC	3090
1802	UGUCUCUC A GCGCUCCA	902	UGGAGCGC CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAGAGACA	3091
1807	CUCAGCGC U CCAUCCAG	903	CUGGAUGG CUGAUGAG GCCGUUAGGC	UAGGC CGAA	ICGCUGAG	3092
1809	CAGCGCUC C AUCCAGCU	904	AGCUGGAU CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAGCGCUG	3093
1810	AGCGCUCC A UCCAGCUU	905	AAGCUGGA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IGAGCGCU	3094
1813	GCUCCAUC C AGCUUGAG	906	CUCAAGCU CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IAUGGAGC	3095
1814	CUCCAUCC A GCUUGAGA	907	UCUCAAGC CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IGAUGGAG	3096
1817	CAUCCAGC U UGAGAGUA	806	UACUCUCA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	ICUGGAUG	3097
1836	GGAUUAAC C CUCCAGAA	606	UUCUGGAG CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IUUAAUCC	3098
1837	GAUUAACC C UCCAGAAC	910	GUUCUGGA CUGAUGAG GCCGUUAGGC	UAGGC CGAA	IGUUAAUC	3099
1838	AUUAACCC U CCAGAACA	911	UGUUCUGG CUGAUGAG GCCGUUAGGC	UAGGC CGAA	CGAA IGGUUAAU	3100

1840	UAACCCUC C AGAACAGC	912	GCUGUUCU CUGAUGAG GCCGUUAGGC CGAA IAGG	IAGGGUUA	3101
1841	AACCCUCC A GAACAGCC	913	GGCUGUUC CUGAUGAG GCCGUUAGGC CGAA IGAG	IGAGGGUU	3102
1846	UCCAGAAC A GCCAGUGG	914	CCACUGGC CUGAUGAG GCCGUUAGGC CGAA IUUCI	IUUCUGGA	3103
1849	AGAACAGC C AGUGGAUG	915	CAUCCACU CUGAUGAG GCCGUUAGGC CGAA ICUGI	ICUGUUCU	3104
1850	GAACAGCC A GUGGAUGA	916	UCAUCCAC CUGAUGAG GCCGUUAGGC CGAA IGCU	IGCUGUUC	3105
1864	UGAAUGGC A CAGUGAUC	917	GAUCACUG CUGAUGAG GCCGUUAGGC CGAA ICCAI	ICCAUUCA	3106
1866	AAUGGCAC A GUGAUCGU	918	ACGAUCAC CUGAUGAG GCCGUUAGGC CGAA IUGC	IUGCCAUU	3107
1879	UCGUGGAC A GCACCGUG	616	CACGGUGC CUGAUGAG GCCGUUAGGC CGAA IUCCA	IUCCACGA	3108
1882	UGGACAGC A CCGUGGGA	920	UCCCACGG CUGAUGAG GCCGUUAGGC CGAA ICUGI	ICUGUCCA	3109
1884	GACAGCAC C GUGGGAAA	921	UUUCCCAC CUGAUGAG GCCGUUAGGC CGAA IUGC	INGCNGNC	3110
1897	GAAAGGAC A CUUUGUUU	922	AAACAAAG CUGAUGAG GCCGUUAGGC CGAA IUCCI	Inccmnc	3111
1899	AAGGACAC U UUGUUUCU	923	AGAAACAA CUGAUGAG GCCGUUAGGC CGAA IUGU	INGUCCOO	3112
1907	UNUGUUUC U UAUCACCU	924	AGGUGAUA CUGAUGAG GCCGUUAGGC CGAA IAAA(IAAACAAA	3113
1912	писпидис д ссивваса	925	UGUCCAGG CUGAUGAG GCCGUUAGGC CGAA IAUAA	IAUAAGAA	3114
1914	CUVAUCAC C UGGACAAC	926	GUUGUCCA CUGAUGAG GCCGUUAGGC CGAA IUGAI	IUGAUAAG	3115
1915	UVAUCACC U GGACAACG	927	CGUUGUCC CUGAUGAG GCCGUUAGGC CGAA IGUGA	IGUGAUAA	3116
1920	ACCUGGAC A ACGCAGCC	928	GGCUGCGU CUGAUGAG GCCGUUAGGC CGAA IUCCI	IUCCAGGU	3117
1925	SYCHACGC Y BCCNCCCC	676	GGGGAGGC CUGAUGAG GCCGUUAGGC CGAA ICGUI	Icennenc	3118
1928	AACGCAGC C UCCCCAAA	086	UUUGGGGA CUGAUGAG GCCGUUAGGC CGAA ICUG	Icuecenn	3119
1929	асвсавсс и ссссаави	931	AUUUGGGG CUGAUGAG GCCGUUAGGC CGAA IGCU	IGCUGCGU	3120
1931	GCAGCCUC C CCAAAUCC	932	GGAUUUGG CUGAUGAG GCCGUUAGGC CGAA IAGG	IAGGCUGC	3121
1932	CAGCCUCC C CAAAUCCU	933	AGGAUUUG CUGAUGAG GCCGUUAGGC CGAA IGAG	IGAGGCUG	3122
1933	AGCCUCCC C AAAUCCUU	934	AAGGAUUU CUGAUGAG GCCGUUAGGC CGAA IGGA(3123
1934	GCCUCCCC A AAUCCUUC	935	GAAGGAUU CUGAUGAG GCCGUUAGGC CGAA IGGG	IGGGAGGC	3124
1939	CCCAAAUC C UUCUCUGG	936	CCAGAGAA CUGAUGAG GCCGUUAGGC CGAA IAUUT	IAUUUGGG	3125
1940	CCAAAUCC U UCUCUGGG	937	CCCAGAGA CUGAUGAG GCCGUUAGGC CGAA IGAUT	IGAUUUGG	3126
1943	AAUCCUUC U CUGGGAUC	938	GAUCCCAG CUGAUGAG GCCGUUAGGC CGAA IAAGC	IAAGGAUU	3127
1945	UCCUUCUC U GGGAUCCC	939	GGGAUCCC CUGAUGAG GCCGUUAGGC CGAA IAGAI	IAGAAGGA	3128
1952	CUGGGAUC C CAGUGGAC	940	GUCCACUG CUGAUGAG GCCGUUAGGC CGAA IAUCO	IAUCCCAG	3129
1953	UGGGAUCC C AGUGGACA	941	UGUCCACU CUGAUGAG GCCGUUAGGC CGAA IGAUC	IGAUCCCA	3130
1954	GGGAUCCC A GUGGACAG	942	CUGUCCAC CUGAUGAG GCCGUUAGGC CGAA IGGAI	IGGAUCCC	3131
1961	CAGUGGAC A GAAGCAAG	943	CUUGCUUC CUGAUGAG GCCGUUAGGC CGAA IUCCI	IUCCACUG	3132
1961	ACAGAAGC A AGGUGGCU	944	AGCCACCU CUGAUGAG GCCGUUAGGC CGAA ICUUCUGU		3133
1975	AAGGUGGC U UUGUAGUG	945	CACUACAA CUGAUGAG GCCGUUAGGC CGAA ICCACCUU		3134

DAGETCHE CECSLE

ACAAAAC A CCAAAAUGG 947 AAAAACAC C AAAAUGGC 948 AAAAUGGC C UACCUCCA 950 AAAAUGGC U ACCUCCAA 951 UGGCCUAC C UCCAAAUC 952 GGCCUACC U CCAAAUCC 953 CCUACCUC C AAAUCCCA 955 UCCAAAUC C CAGGCAUUG 956 UCCAAAUC C AAGCCUAG 957 CCAAAUCC A AAUCCCAG 958 UCCAAAUC C CAGGCAUUG 950 UCCAAAUC C AAGCCUAG 950 UCCAAAUC C AAGCAUUG 950 UCCAAAUC C AAGCAUUG 960 AGGUUGGC A UUGGAAAU 962 GGCAUUGC A AGCAACC 963 GGCAUUGC A GCCAUUG 960 AGGUUGGC A CUUGGAAAU 965 CCAAAUCC C AGGCAUUG 960 AGGUUGGC A CUUGGAAAU 965 CCAAAUCC C AGCCAUUG 960 AGGCUUGC A AGCCUCACA 966 AAGCUCAC A AGCCUCACA 960 CCACAAACC U CACAAACCU 968 AAGCAAGC C CACAAACCU 970 CCUUGACC C UGACUGUC 973 CCUUGACC C UGACUGUC 973 CCUUGACC C UGACUGUC 976 UCACAAAC C UGACCGUC 976 GCACUGAC C CUGACUGUC 976 UCACAAAC C UGACUGUC 977 UCACGUC C GUGCGUCC 978 UCACCUGAC C CUGACUGUC 976 UCACCUCC C GUGCGUCC 978	1987	UAGUGGAC A AAAACACC	946	GGUGUUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IUCCACUA	3135
AAAAACAC C AAAAUGGC 948 AAAAACACC A AAAUGGCC 949 AAAAUGGC C UACCUCCAA 950 AAAUGGCC U ACCUCCAA 951 UGGCCUAC C UACCAAUCC 953 CCUACCUC C AAAUCCCAG 954 CUACCUCC A AAUCCCAG 956 UCCAAAUCC C AAAUCCCAG 957 CCAAAUCC C AAAUCCCAG 958 UCCAAAUCC C AGGCAUUG 950 UCCAAAUCC C AGGCAUUG 950 UCCAAAUCC C AGGCAUUG 960 AGCAUUGC U AAGGUUGG 960 AGGUUGGC A UUGGAAAU 962 GGAAAUCC A GGCAUUGC 963 AGGUUGGC A CUUGGAAAU 965 GUUGGCAC U GCAAGCU 965 CUGCAAGC U GCAAGCU 966 AAGCUCAC A ACCUUGA 969 CUGCAAGC U CACAAGCU 970 CCUGAAGC U CACAAACCU 970 CCCUUGAC C UGACUGUC 973 CCCUUGAC C UGACUGUC 973 CCUUGACC U GACUGUC 976 ACCUUGAC C UGACUGUC 976 ACCUUGAC C UGACUGUC 976 GUCACAGUC C C	1993	Æ	947	CAUUUUGG	CUGAUGAG	GCCGUUAGGC	CGAA	IUUUUUGU	3136
AAAACACC A AAAUGGCC 949 AAAAUGGC C UACCUCCA 950 AAAUGGCC U ACCUCCAA 951 UGGCCUAC C UCCAAAUCC 953 GGCCUACC U CCAAAUCC 954 CCUACCUC C AAAUCCCAG 956 UCCAAAUC C CAGGCAUU 956 UCCAAAUC C CAGGCAUUG 957 CCAAAUCC C AGGCAUUG 957 CCAAAUCC C AGGCAUUG 950 GGCAUUGC A UGCCAAA 961 GGCAUUGC A GGCAUUGC 950 AGGUUGGC A UUGCAAA 961 GUUGGCAC U UGGAAAUA 962 GUUGGCAC U UGGAAAUA 965 AUACAGUC A GUUGGAAAUA 965 CUGCAAUGC A GUUGGAAAUA 966 AAGCUUGC A AGCUUCAA 969 AAGCUCAC A AGCUUCAA 969 AAGCUCAC A AGCUUCAA 970 CCCUUGAC C UGACUUCA 973 CCCUUGAC C UGACUUCA 974 ACCUUGAC C UGACUUCA 976 ACCUUGAC C UGACUUCA 976 GUCACAGUC C CUGACUUCA 976 CCUUGACC U GUCACCUC 977 UCACACUCC <td>1995</td> <td>บ</td> <td>948</td> <td>GCCAUUUU</td> <td>CUGAUGAG</td> <td>GCCGUUAGGC</td> <td>CGAA</td> <td>IUGUUUUU</td> <td>3137</td>	1995	บ	948	GCCAUUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IUGUUUUU	3137
AAAAUGGCC C UACCUCCA 950 AAAUGGCC U ACCUCCAA 951 UGGCCUAC C UCCAAAUCC 953 GGCCUACC U CCAAAUCCCAG 954 CUACCUCC AAAUCCCAG 955 UCCAAAUCC C AAAUCCCAG 956 UCCAAAUCC C AGGCAUUG 956 UCCAAAUCC C AGGCAUUG 950 CCAAAUCC C AGGCAUUG 950 UCCCAGGC A UUGCAAAG 961 GGCAUUGC A GGCAUUGG 960 AGGUUGGC A UUGGAAAUA 962 GGCAUUGG A UGGAAAUA 963 AUACAGUC U GCAAGCCA 966 AUACAGUC U GCAAGCCA 967 GUUGGCAC U UGGAAAUA 967 GUUGGCAC U GCAAGCCU 967 GUUGGCAC U GCAAGCCU 967 AAGCAAGC U GCAAGCCU 967 AAGCAAGC U CACAAACC 966 AAGCAAACC U UGACCCUG 970 CCUUGACC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGAC C UGACUGUC 976 GUCACGUC C GUGCCGUC 976 GUCACGUC C GUGCCGUC 977 UCACACGUC C	1996	A	949	GGCCAUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IGUGUUUU	3138
AAAUGGCC U ACCUCCAA 951 UGGCCUAC C UCCAAAUC 952 GGCCUACC U CCAAAUCC 953 CCUACCUC C AAUCCCAG 954 CCUACCUC C AAUCCCAG 955 UCCAAAUCC C AGGCAUUG 956 UCCAAAUCC C AGGCAUUG 957 CCAAAUCC C AGGCAUUG 958 UCCCAGGC A UUGCUAAG 960 AGGUUGGC A GGCAUUGG 960 AGGUUGGC A GGCAUUGG 963 AUACAGUC U GCAAGCAA 966 AUACAGUC U GCAAGCAA 966 AUACAGUC U GCAAGCAA 966 AUACAGUC U GCAAGCAA 967 GCAGUCACA A AGCUCACA 967 GCAGUCACA A AGCUCACA 967 GCAGAGCC U GACAGCU 970 CCUCGAACC U UGACCCUG 971 ACCCUGAC C UGACCUGU 972 CCUUGACC U GACUGUC 974 ACCCUGAC U GACUGUC 976 UCACAGUC 0 GACCUGUC CCUUGACC U GACUGUC 976 UCACAGUC 0 GACCUGUC CCUUGACC U GACCUGUC 976 UCACACGUC 0	2004	ט	950	UGGAGGUA	CUGAUGAG	GCCGUUAGGC	CGAA	ICCAUUUU	3139
UGGCCUAC C UCCAAAUC 952 GGCCUACC U CCAAAUCC 953 CCUACCUC C AAAUCCCAG 954 CUACCUCC A AAUCCCAG 955 UCCAAAUCC C AGGCAUUG 956 UCCAAAUCC C AGGCAUUG 957 CCAAAUCCC A GGCAUUGC 958 UCCCAGGC A UUGCUAAG 960 AGGUUGGC A UUGCAAA 961 GUUGGCAC U UGGAAAUA 963 AUACAGUC U GCAAGCA 966 AUACAGUC U GCAAGCA 966 AUACAGUC U GCAAGCA 967 GCAGUUGC A AGCUCACA 968 AAGCUCACA AGCUCACA 969 UCACAAGC U CACAAACC 970 GCAAGCUC A AGCUUGA 970 CUGCAAAC C UUGACCCU 971 ACCUUGAC C UGACUGUC 973 CCUUGACC U GACUGUC 974 ACCUUGAC U GACCUGUC 976 UGACCUGUC 976 UGACCUGUC 976 UCACAAAC C UGACUGUC 976 CUUGACCC U GACUGUC 976 UCACAAACC C UGACUGUC 976 UGACCUGUC 976 <td>2005</td> <td>n</td> <td>951</td> <td>UUGGAGGU</td> <td>CUGAUGAG</td> <td>GCCGUUAGGC</td> <td>CGAA</td> <td>IGCCAUUU</td> <td>3140</td>	2005	n	951	UUGGAGGU	CUGAUGAG	GCCGUUAGGC	CGAA	IGCCAUUU	3140
GGCCUACC U CCAAAUCC 953	2008	ט	952	GAUUUGGA	CUGAUGAG	GCCGUUAGGC	CGAA	IUAGGCCA	3141
CCUACCUC C AAAUCCCA 954 CUACCUCC A AAUCCCAG 955 UCCAAAUC C CAGGCAUU 956 CCAAAUCC C AGGCAUUG 957 CCAAAUCC C AGGCAUUG 957 CCAAAUCC C AGGCAUUG 959 UCCCAGGC A UUGCUAAG 960 AGGUUGGC A UUGGAAA 961 GUUGGCAC U UGGAAAUA 963 AUACAGUC A GUUGGCAA 966 CUGCAAGC U CACAAGCU 967 GCAGUUGG A AGCUCACA 968 AAGCUCAC A AGCUCACA 969 AAGCUCAC A AGCUCACA 969 AAGCUCAC C UCACACUUGA 970 CCCUUGAC C UGACCUUG 971 ACCUUGAC C UGACUGUC 973 CCUUGACC U GACUGUC 974 ACCUUGAC U GUCACCUUG 976 ACCUUGAC C UGACUGUC 976 ACCUUGAC C UGACUGUC 976 ACCUUGAC C UGACUGUC 976 ACCCUUGAC U GUCACCUUG 976 UCACACUCC C UGACUGUC 976 ACCCUUGAC C UGACUGUC 976 UCACACUCC C UGACUGUC 976 UCACACUCC C UGA	2009	Þ	953	GGAUUUGG	CUGAUGAG	GCCGUUAGGC	CGAA	IGUAGGCC	3142
CUACCUCC A AAUCCCAG 955 UCCAAAUC C CAGGCAUU 956 CCAAAUCC C AGGCAUUG 957 CCAAAUCC C AGGCAUUGC 958 UCCCAGGC A UUGCUAAG 959 GGCAUUGC 960 AGGUUGGC A UUGCAAA 961 GUUGGCAC U UGGAAAUA 963 AUACAGUC A GUCUGCAA 966 CUGCAAGC A GUCUGCAA 966 AAGCUCAC A AGCAACCU 967 GCAAGCUC A CACAACCU 968 AAGCUCAC A AGCUUGA 969 AAGCUCAC A AACCUUGA 969 UCACAAACC U UGACCUG 970 CCCUUGAC C UGACUGUC 973 CCCUUGAC C UGACUGUC 974 ACCUUGAC C UGACUGUC 975 UGACCCCU 976 GUCACGUC C CUGACUGUC 976 GUCACGUC C CUGACCUC 976 GUCACGUC C CUGACCUC 976 GUCACCUC 978 CCUUGACC C GUGCGUC 976 GUCACGUC C GUGCGUC 978	2011	S	954	UGGGAUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IAGGUAGG	3143
UCCAAAUC C CAGGCAUU 956 CCAAAUCC C AGGCAUUG 957 CAAAUCCC A GGCAUUGC 958 UCCCAGGC A UUGCUAAG 959 GGCAUUGC U AAGGUUGG 960 AGGUUGGC A UUGGAAAUA 962 GUUGGCAC U UGGAAAUA 963 AUACAGUC U GCAAGCAA 966 AUACAGUC U GCAAGCAA 966 AAGCAAGC U GCAAACCU 967 GCAAGCUC A AGCACCU 969 CUGCAAGC C CAAACCU 970 CACAAGCUC A AGCUCACA 969 UCACAAAC C UUGACCCU 971 AAGCAAAC C UUGACCCU 972 CCCUUGAC C CUGACUGU 974 ACCUUGAC C UGACUGUC 975 CUUGACCC U GACUGUC 976 ACCCUGAC U GACUGUC 976 UGACCUGUC 976 UGACCUGUC 976 UGACCUGUC 976 UGACCUGUC 976 UGACCUGUC 977 UCACACGUC 0000CCCU UCACACGUC 077 UCACACGUC 0000CCCU UCACACGUC	2012	A	955	CUGGGAUU	CUGAUGAG	GCCGUUAGGC	CGAA	IGAGGUAG	3144
CCAAAUCC C AGGCAUUG 957 CCAAAUCCC A GGCAUUGC 958 UCCCAGGC A UUGCUAAG 959 GGCAUUGC 960 AGGUUGGC A UUGCAAAUA 961 GUUGGCAC U UGGAAAUA 963 AUACAGUC U GCAAGCAA 964 CAGUCUGC A GUCUGCAA 966 AAGCAAGC U GCAAGCU 965 CUGCAAGC A AGCUCACA 966 AAGCAAGC U CACAAACC 967 GCAAGCUC A AGCUUGA 969 UCACAAAC C UUGACCCU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C CUGACUGU 972 CCUUGACC U GACUGUC 973 CCUUGACC U GACUGUC 974 ACCCUGAC U GACUGUC 975 UGACUGUC C CUGACUGUC 976 GUCACGUC C CUGACUGUC 976 UCACAGUC C CUGACUGUC 976 UCACAGUC C CUGACUGUC 976 UCACCUGAC C CUGACUGUC 976 UCACACUCC C GUGCCGUC 977 UCACACUCC C GUGCCGUC 978	2017	ນ	926	AAUGCCUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUUGGA	3145
CAAAUCCC A GGCAUUGC 958 UCCCAGGC A UUGCUAAG 959 GGCAUUGC U AAGGUUGG 960 AGGUUGGC A CUUGGAAA 961 GUUGGCAC U UGGAAAUA 962 GUUGGCAC U UGGAAAUA 963 AUACAGUC U GCAAGCAA 966 CAGUCUGC A AGCUCACA 966 AAGCAAGC U CACAAACC 967 GCAAGCUC A AGCUUGA 969 UCACAAAC C UUGACCCU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGACC U GACUGUC 975 UGACCUGUC 976 ACCUUGAC C C UGACUGUC 977 UGACUGUC C CUGACUGU 976 GUUGACCC U GACUGUC 976 UGACUGUC C CUGACUGUC 976 UCACAGUC C CUGACUGUC 976 UCACCUGAC C CUGACUGUC 976 UCACCUGAC C CUGACUGUC 977 UCACCUGAC C CUGACCUGU 976 UCACCUGUC C CUGACCUCC 978	2018	บ	957	CAAUGCCU	CUGAUGAG	GCCGUUAGGC	CGAA	IGAUUUGG	3146
UCCCAGGC A UUGCUAAG 959 GGCAUUGC U AAGGUUGG 960 AGGUUGGC A CUUGGAAA 961 GUUGGCAC U UGGAAAUA 962 GGAAAUAC A GUCUGCAA 964 CAGUCUGC A AGCAAGCU 965 CUGCAAGC U CACAAACCU 967 GCAGCUCAC A AGCUCACA 968 AAGCUCAC A AACCUUGA 970 CACAAGCUC A CAAACCUU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGACC U GACUGUC 975 UGACCUGUC 976 ACCCUGAC U GACUGUC 977 UGACCUGUC 976 GUCACGUC C GUGCGUC 976 UCACAGUC C GUGCGUC 976 GUCACGUC C GUGCGUC 976 UCACAGUC C GUGCGUCC 978 UCACAGUC C GUGCGUCC 978	2019		928	GCAAUGCC	CUGAUGAG	GCCGUUAGGC	CGAA	IGGAUUUG	3147
GGCAUUGGC U AAGGUUGG 960 AGGUUGGC A CUUGGAAA 961 GUUGGCAC U UGGAAAUA 962 GGAAAUAC A GUCUGCAA 963 AUACAGUC U GCAAGCAA 965 CUGCAAGC A AGCAAGCU 966 AAGCUCAC A AGCUCACA 966 AAGCUCAC A AGCUUGA 969 AAGCUCAC A AACCUUGA 970 CACAAACC U UGACCCU 971 ACCUUGAC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGAC C UGACUGUC 975 UGACCUGUC 976 ACCUUGAC C UGACUGUC 976 ACCUUGAC C UGACUGUC 977 UGACUGUC C UGACUGUC 976 ACCUUGAC C UGACUGUC 976 UGACUGUC C UGACUGUC 976 UCACAGUC C GUGCGUC 977 UCACAGUC C GUGCGUCC 978	2023		626	CUUAGCAA	CUGAUGAG	GCCGUUAGGC	CGAA	ICCUGGGA	3148
AGGUUGGC A CUUGGAAA 961 GUUGGCAC U UGGAAAUA 962 GGAAAUAC A GUCUGCAA 963 AUACAGUC U GCAAGCAA 964 CAGUCUGC A AGCAAGCU 965 CUGCAAGC U CACAAACC 967 AAGCUCAC A AGCUUGA 968 AAGCUCAC A AACCUUGA 970 UCACAAACC U UGACCCU 971 ACCUUGAC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGAC C UGACUGUC 975 UGACUGUC A CGUGCGUC 976 ACCUUGAC C UGACUGUC 976 ACCUUGAC C UGACUGUC 976 UGACUGUC C UGACUGUC 977 UCACAGUC C C UGACUGUC 976 UCACAGUC C C UGACUGUC 976 UCACAGUC C C UGACUGUC 976 UCACAGUC C GUGCGUC 978 UCACAGUC C GUGCGUCC 978	2028	D	096	CCAACCUU	CUGAUGAG	GCCGUUAGGC	CGAA	ICAAUGCC	3149
GUUGGCAC U UGGAAAUA 962 GGAAAUAC A GUCUGCAA 963 AUACAGUC U GCAAGCAA 964 CAGUCUGC A AGCUCACA 966 AAGCAAGC U CACAAACCU 968 AAGCAAGC U CACAAACCU 968 AAGCUCAC A CACAACCUU 969 AAGCUCAC A CACAACCUU 970 CCACAAAC C UUGACCCUG 971 ACCUUGAC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGACC C UGACUGUC 975 ACCUUGAC C C UGACUGUC 975 UGACUGUC C UGACUGUC 976 ACCCUGAC U GACUGUCA 976 ACCCUGAC U GACUGUCA 976 UGACUGUC C UGACUGUC 977 UCACAGUC C C UGACUGUC 976 UCACAGUC C C GUGCGUC 978 UCACAGUC C GUGCGUCC 978	2038	Ą	196	UUUCCAAG	CUGAUGAG	GCCGUUAGGC	CGAA	ICCAACCU	3150
GGAAAUAC A GUCUGCAA 963 AUACAGUC U GCAAGCAA 964 CAGUCUGC A AGCAAGCU 965 CUGCAAGC A AGCAAGCU 966 AAGCAAGC U CACAAACC 967 GCAAGCUC A CACAACCU 968 AAGCUCAC A AACCUUGA 969 UCACAAAC C UUGACCCU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C CUGACUGU 972 CCUUGACC U GACUGUCA 975 CCUUGACC U GACUGUCA 975 CCUUGACC U GACUGUCA 975 UGACUGUC C CUGACGUC 975 UCACGUCC C GUGCGUCC 976 CCACACUCC C CUGACGUC 977 UCACGUCC C GUGCGUCC 978 CCAUGACUC C GUGCGUC 978 CCAUGACUC C GUGCCUC 978 CCAUGACUC C 97	2040	Þ	962	UAUUUCCA	CUGAUGAG	GCCGUUAGGC	CGAA	IUGCCAAC	3151
AUACAGUC U GCAAGCAA 964 CAGUCUGC A AGCAAGCU 965 CUGCAAGC A AGCUCACA 966 AAGCAAGC U CACAAACC 967 GCAAGCUC A CAAACCUUGA 969 UCACAAAC C UUGACCCU 970 UCACAAAC C UUGACCCU 971 ACCUUGAC C UGACUGU 972 CCUUGACC U GACUGUC 973 CCUUGACC U GACUGUC 974 ACCCUGAC U GACUGUC 975 UGACUGUC C UGACUGUC 976 UGACUGUC C GUGCGUC 976 UCACGUCC C GUGCGUC 977 UCACGUCC C GUGCGUC 978 UCACGUCC C GUGCGUCC 978	2050	∢	696	UUGCAGAC	CUGAUGAG	GCCGUUAGGC	CGAA	IUAUUUCC	3152
CAGUCUGC A AGCAAGCU 965 CUGCAAGC A AGCUCACA 966 AAGCAAGC U CACAAACC 967 GCAAGCUC A CACAACCUU 968 AAGCUCAC A AACCUUGA 970 UCACAAAC C UGACCCU 971 ACCUUGAC C UGACCUGU 972 CCUUGACC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCCUGAC U GACUGUC 975 UGACUGUC C UGACGUC 976 UCACGUC C C UGACGUC 976 UCACGUC C GUGCGUC 978 UCACGUC C GUGCGUC 978 UCACGUC C GUGCGUC 978	2054		964	UNGCINGC	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IACUGUAU	3153
CUGCAAGC A AGCUCACA 966 AAGCAAGC U CACAAACC 967 GCAAGCUC A CACAACCUU 968 AAGCUCAC A AACCUUGA 970 UCACAAACC U UGACCCUG 971 ACCUUGAC C UGACUGUC 973 CCUUGACC C UGACUGUC 974 ACCUUGACC U GACUGUCA 974 ACCCUGAC U GACUGUCA 975 UGACUGUC A CGUGCGUC 976 UCACGUC C GUGCGUCC 978 UCACGUCC C GUGCGUCC 978 UCACGUCC C GUGCGUCC 978	2057		965	AGCUUGCU	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	ICAGACUG	3154
AAGCAAGC U CACAAACC 967 GCAAGCUC A CAAACCUU 968 AAGCUCAC A AACCUUGA 969 UCACAAAC C UUGACCCU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C CUGACUGU 972 CCUUGACC C UGACUGUC 973 CUUGACCC U GACUGUCA 974 ACCCUGAC U GACUGUCA 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C GUGCGUCC 978 UCACGUCC C GUGCGUCC 978	2061		996	UGUGAGCU	CUGAUGAG	GCCGUUAGGC	CGAA	ICUUGCAG	3155
GCAAGCUC A CAAACCUU 968 AAGCUCAC A AACCUUGA 969 UCACAAAC C UUGACCCUG 971 CACAAACC U UGACCCUG 972 ACCUUGAC C UGACUGUC 973 CUUGACCC U GACUGUCA 974 ACCCUGAC U GACUGUCA 975 ACCCUGAC U GACUGUCA 976 ACCCUGAC C GUGCGUC 976 UCACGUCC C GUGCGUCC 976 UCACGUCC C GUGCGUCC 977 UCACGUCC C GUGCGUCC 976 CGUGCGUCC C GUGCGUCC 977 CGUGCGUCC C GUGCGUCC 978 CGUCCCUCC C GUGCGUCC 978 CGUCCCUCCUCC C GUGCGUCC 978 CGUCCCUCC C GUCCCUCC 978 CGUCCCUCC C GUCCCUCC 978 CGUCCCUCC C GUCCCUCC 978 CGUCCUCC C GUCCCUCC 978 CGUCCCUCC C GUCCCUCC 978 CGUCCCUC	2065		296	GGUUUGUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICUUGCUU	3156
AAGCUCAC A AACCUUGA 969 UCACAAAC C UUGACCCU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C UGACUGUC 973 CCUUGACC U GACUGUCA 974 ACCCUGAC U GACUGUCA 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C GUGCGUC 977 UCACGUCC C GUGCGUC 978 CGUGCGUC C GUGCGUC 978	2067	⋖	968	AAGGUUUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAGCUUGC	3157
UCACAAAC C UUGACCCU 970 CACAAACC U UGACCCUG 971 ACCUUGAC C CUGACUGU 972 CCUUGACCC U GACUGUC 973 CUUGACCC U GACUGUCA 974 ACCCUGAC U GACUGUCA 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C CGUGCGUC 977 UCACGUCC C GUGCGUCC 978 CGUGCGUC C GUGCGUCC 978	2069	Ø	969	UCAAGGUU	CUGAUGAG	GCCGUUAGGC	CGAA	IUGAGCUU	3158
CACAAACC U UGACCCUG 971 ACCUUGAC C CUGACUGU 972 CCUUGACCC U GACUGUCA 974 ACCCUGAC U GACUGUCA 975 UGACUGUC A CGUCCCGU 976 UCACGUC C CGUGCGUC 977 UCACGUCC C GUGCGUCC 978 CCTIGCCIIC C AATIGCTAC 979	2073	บ	970	AGGGUCAA	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IUUUGUGA	3159
ACCUUGAC C CUGACUGU 972 CCUUGACC C UGACUGUC 973 CUUGACCC U GACUGUCA 974 ACCCUGAC U GUCACGUC 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C GUGCGUCC 978 CCTICCCIIC C AATICCTAC 979	2074	CACAAACC U UGACCCUG	971	CAGGGUCA	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IGUUUGUG	3160
CCUUGACC C UGACUGUC 973 CUUGACCC U GACUGUCA 974 ACCCUGAC U GUCACGUC 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C GUGCGUCC 978 UCACGUCC C GUGCGUCC 978	2079	บ	972	ACAGUCAG	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IUCAAGGU	3161
CUUGACCC U GACUGUCA 974 ACCCUGAC U GUCACGUC 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C CGUGCGUC 977 UCACGUCC C GUGCGUCC 978	2080	ບ	973	GACAGUCA	CUGAUGAG	GCCGUUAGGC	CGAA	IGUCAAGG	3162
ACCCUGAC U GUCACGUC 975 UGACUGUC A CGUCCCGU 976 GUCACGUC C CGUGCGUC 977 UCACGUCC C GUGCGUCC 978	2081	Ы	974	UGACAGUC (CUGAUGAG	GCCGUUAGGC	CGAA	IGGUCAAG	3163
GUCACGUC A CGUCCCGU 976 GUCACGUC C CGUGCGUC 977 UCACGUCC C GUGCGUCC 978	2085	ь	975	GACGUGAC	CUGAUGAG	GCCGUUAGGC	CGAA	IUCAGGGU	3164
GUCACGUC C CGUGCGUC 977 UCACGUCC C GUGCGUCC 978 CGITGCGIC DAITGCIAC 979	2089	Ø	916	ACGGGACG	CUGAUGAG	GCCGUUAGGC	CGAA	IACAGUCA	3165
UCACGUCC C GUGCGUCC 978	2094	ט	977	GACGCACG	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IACGUGAC	3166
010 ZATTABITA Z ZITBABITA	2095	ت	978	GGACGCAC	CUGAUGAG	GGACGCAC CUGAUGAG GCCGUUAGGC	CGAA	IGACGUGA	3167
רור שמתחתים המספסים	2103	CGUGCGUC C AAUGCUAC	979	GUAGCAUU	CUGAUGAG	GUAGCAUU CUGAUGAG GCCGUUAGGC CGAA	CGAA	IACGCACG	3168

2104	GUGCGUCC 1	A AUGCUACC	980	GGUAGCAU	CUGAUGAG	GCCGUUAGGC	CGAA	IGACGCAC	3169
2109	UCCAAUGC 1	U ACCCUGCC	981	GGCAGGGU	CUGAUGAG	GCCGUUAGGC	CGAA	ICAUUGGA	3170
2112	AAUGCUAC	c cueccucc	982	GGAGGCAG	CUGAUGAG	GCCGUUAGGC	1 1	CGAA IUAGCAUU	3171
2113	AUGCUACC	C UGCCUCCA	983	UGGAGGCA	CUGAUGAG	GCCGUUAGGC		CGAA IGUAGCAU	3172
2114	UGCUACCC U	J GCCUCCAA	984	UUGGAGGC	CUGAUGAG	GCCGUUAGGC	CGAA	IGGUAGCA	3173
2117	UACCCUGC	C UCCAAUUA	985	UAAUUGGA	CUGAUGAG	GCCGUUAGGC	CGAA	ICAGGGUA	3174
2118	ACCCUGCC 1	U CCAAUUAC	986	GUAAUUGG	CUGAUGAG	GCCGUUAGGC	CGAA	IGCAGGGU	3175
2120	CCUGCCUC	C AAUUACAG	987	CUGUAAUU	CUGAUGAG	GCCGUUAGGC	CGAA	IAGGCAGG	3176
2121	CUGCCUCC 1	A AUUACAGU	988	ACUGUAAU	CUGAUGAG	GCCGUUAGGC	CGAA	IGAGGCAG	3177
2127	CCAAUUAC A	A GUGACUUC	989	GAAGUCAC	CUGAUGAG	GCCGUUAGGC CGAA IUAAUUGG	CGAA	IUAAUUGG	3178
2133	ACAGUGAC U	J UCCAAAAC	066	GUUUUGGA	CUGAUGAG	GCCGUUAGGC CGAA IUCACUGU	CGAA	IUCACUGU	3179
2136	GUGACUUC (C AAAACGAA	991	ບບດອບບບບ	CUGAUGAG	GCCGUUAGGC	CGAA	IAAGUCAC	3180
2137	UGACUUCC 1	A AAACGAAC	992	GUUCGUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IGAAGUCA	3181
2146	AAACGAAC	A AGGACACC	993	GGUGUCCU	CUGAUGAG	GCCGUUAGGC	CGAA	IUUCGUUU	3182
2152	ACAAGGAC 1	A CCAGCAAA	994	UUUGCUGG	CUGAUGAG	GCCGUUAGGC		CGAA IUCCUUGU	3183
2154	AAGGACAC C	S AGCAAAUU	995	AAUUUGCU		CUGAUGAG GCCGUUAGGC CGAA IUGUCCUU	CGAA	INGNCCON	3184
2155	AGGACACC 1	A GCAAAUUC	966	GAAUUUGC	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IGUGUCCU	3185
2158	ACACCAGC 1	A AAUUCCCC	166	GGGGAAUU	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGGUGU	3186
2164	GCAAAUUC (c ccagcccu	866	AGGGCUGG	CUGAUGAG	GCCGUUAGGC	CGAA	IAAUUUGC	3187
2165	CAAAUUCC (C CAGCCCUC	666	GAGGGCUG	CUGAUGAG	GCCGUUAGGC	CGAA	IGAAUUUG	3188
2166	AAAUUCCC (C AGCCCUCU	1000	AGAGGGCU	CUGAUGAG	GCCGUUAGGC	CGAA	IGGAAUUU	3189
2167	AAUUCCCC 7	A GCCCUCUG	1001	CAGAGGGC	CUGAUGAG	GCCGUUAGGC	CGAA	IGGGAAUU	3190
2170	UCCCCAGC (C CUCUGGUA	1002	UACCAGAG	CUGAUGAG	GCCGUUAGGC		CGAA ICUGGGGA	3191
2171	CCCCAGCC	c ucugguag	1003	CUACCAGA	CUGAUGAG	GCCGUUAGGC	CGAA	IGCUGGGG	3192
2172	CCCAGCCC 1	u cugguagu	1004	ACUACCAG	CUGAUGAG	GCCGUUAGGC	CGAA	IGGCUGGG	3193
2174	CAGCCCUC 1	U GGUAGUUU	1005	AAACUACC	CUGAUGAG	GCCGUUAGGC	CGAA	IAGGGCUG	3194
2187	GUUUAUGC 1	A AAUAUUCG	1006	CGAAUAUU	CUGAUGAG	GCCGUUAGGC		CGAA ICAUAAAC	3195
2197	AUAUUCGC (C AAGGAGCC	1001	GGCNCCNN	CUGAUGAG	GCCGUUAGGC	CGAA	ICGAAUAU	3196
2198	UAUUCGCC 1	A AGGAGCCU	1008	AGGCUCCU	CUGAUGAG	GCCGUUAGGC	CGAA	IGCGAAUA	3197
2205	CAAGGAGC (c uccccaau	1009	AUUGGGGA	CUGAUGAG	GCCGUUAGGC	CGAA	ICUCCUUG	3198
2206	AAGGAGCC 1	U CCCCAAUU	1010	AAUUGGGG	CUGAUGAG	GCCGUUAGGC	CGAA	IGCUCCUU	3199
2208	GGAGCCUC	C CCAAUUCU	1011	AGAAUUGG	CUGAUGAG	GCCGUUAGGC	CGAA	IAGGCUCC	3200
2209	GAGCCUCC	c caauucuc	1012	GAGAAUUG	CUGAUGAG	GCCGUUAGGC		CGAA IGAGGCUC	3201
2210	AGCCUCCC (AGCCUCCC C AAUUCUCA	1013	UGAGAAUU	CUGAUGAG	UGAGAAUU CUGAUGAG GCCGUUAGGC CGAA IGGAGGCU	CGAA	IGGAGGCU	3202

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2211	GCCUCCCC A AUUCUCAG	1014	CUGAGAAU CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IGGGAGGC	3203
2216	CCCAAUUC U CAGGGCCA	1015	uggcccug cug	CUGAUGAG	GCCGUUAGGC	CGAA	IAAUUGGG	3204
2218	CAAUUCUC A GGGCCAGU	1016	ACUGGCCC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAGAAUUG	3205
2223	CUCAGGGC C AGUGUCAC	1017	GUGACACU CUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICCCUGAG	3206
2224	UCAGGGCC A GUGUCACA	1018	UGUGACAC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IGCCCUGA	3207
2230	CCAGUGUC A CAGCCCUG	1019	CAGGGCUG CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IACACUGG	3208
2232	AGUGUCAC A GCCCUGAU	1020	AUCAGGGC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUGACACU	3209
2235	GUCACAGC C CUGAUUGA	1021	UCAAUCAG CUGAUGAG		GCCGUUAGGC	CGAA	ICUGUGAC	3210
2236	UCACAGCC C UGAUUGAA	1022	UUCAAUCA CUG	AUGAG	CUGAUGAG GCCGUUAGGC CGAA	CGAA	IGCUGUGA	3211
2237	CACAGCCC U GAUUGAAU	1023	AUUCAAUC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IGGCNGNG	3212
2247	AUUGAAUC A GUGAAUGG	1024	CCAUUCAC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUCAAU	3213
2262	GGAAAAC A GUUACCUU	1025	AAGGUAAC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUUUUUCC	3214
2268	ACAGUUAC C UUGGAACU	1026	AGUUCCAA CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUAACUGU	3215
2269	CAGUUACC U UGGAACUA	1027	UAGUUCCA CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IGUAACUG	3216
2276	CUUGGAAC U ACUGGAUA	1028	UAUCCAGU CUGAUGAG GCCGUUAGGC	AUGAG	GCCGUUAGGC	CGAA	IUUCCAAG	3217
2279	GGAACUAC U GGAUAAUG	1029	CAUUAUCC CUG		GCCGUUAGGC	CGAA	IUAGUUCC	3218
2292	AAUGGAGC A GGUGCUGA	1030	UCAGCACC CUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICUCCAUU	3219
2298	GCAGGUGC U GAUGCUAC	1031	GUAGCAUC CUG	CUGAUGAG	GCCGUUAGGC	CGAA		3220
2304	GCUGAUGC U ACUAAGGA	1032	UCCUUAGU CUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICAUCAGC	3221
2307	GAUGCUAC U AAGGAUGA	1033	UCAUCCUU CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUAGCAUC	3222
2323	ACGGUGUC U ACUCAAGG	1034	CCUUGAGU CUGAUGAG GCCGUUAGGC CGAA	AUGAG	GCCGUUAGGC	CGAA	IACACCGU	3223
2326	GUGUCUAC U CAAGGUAU	1035	AUACCUUG CUGAUGAG GCCGUUAGGC	AUGAG	GCCGUUAGGC	CGAA	IUAGACAC	3224
2328	GUCUACUC A AGGUAUTU	1036	AAAUACCU CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAGUAGAC	3225
2338	GGUAUUUC A CAACUUAU	1037	AUAAGUUG CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAAAUACC	3226
2340	UAUUUCAC A ACUUAUGA	1038	UCAUAAGU CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUGAAAUA	3227
2343	UUCACAAC U UAUGACAC	1039	GUGUCAUA CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUUGUGAA	3228
2350	CUUAUGAC A CGAAUGGU	1040	ACCAUUCG CUG	CUGAUGAG	GCCGUUAGGC	CGAA	IUCAUAAG	3229
2365	GUAGAUAC A GUGUAAAA	1041	UUUUACAC CUG	AUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IUAUCUAC	3230
2382	GUGCGGGC U CUGGGAGG	1042	CCUCCCAG CUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICCCGCAC	3231
2384	GCGGGCUC U GGGAGGAG	1043	cuccuccc cua	CUGAUGAG	GCCGUUAGGC		IAGCCCGC	3232
2400	GUUAACGC A GCCAGACG	1044	cencneec cne	CUGAUGAG	GCCGUUAGGC	CGAA	ICGUNAAC	3233
2403	AACGCAGC C AGACGGAG	1045	cuccencu cue	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGCGUU	3234
2404	ACGCAGCC A GACGGAGA	1046	ucucceuc cue	AUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IGCUGCGU	3235
2420	AGUGAUAC C CCAGCAGA	1047	UCUGCUGG CUGAUGAG GCCGUUAGGC CGAA IUAUCACU	AUGAG	GCCGUUAGGC	CGAA	IUAUCACU	3236

2421	GUGAUACC C CAGCAGAG	1048	CUCUGCUG CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGUAUCAC	3237
2422	UGAUACCC C AGCAGAGU	1049	ACUCUGCU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGGUAUCA	3238
2423	GAUACCCC A GCAGAGUG	1050	CACUCUGC CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGGGUAUC	3239
2426	ACCCCAGC A GAGUGGAG	1051	CUCCACUC CU	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGGGGU	3240
2436	AGUGGAGC A CUGUACAU	1052	AUGUACAG CU	CUGAUGAG	GCCGUUAGGC	CGAA	ICUCCACU	3241
2438	UGGAGCAC U GUACAUAC	1053	GUAUGUAC CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUGCUCCA	3242
2443	CACUGUAC A UACCUGGC	1054	GCCAGGUA CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUACAGUG	3243
2447	GUACAUAC C UGGCUGGA	1055	UCCAGCCA CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUAUGUAC	3244
2448	UACAUACC U GGCUGGAU	1056	AUCCAGCC CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGUAUGUA	3245
2452	UACCUGGC U GGAUUGAG	1057	CUCAAUCC CUGAUGAG	JGAUGAG	GCCGUUAGGC	CGAA	ICCAGGUA	3246
2474	UGAAAUAC A AUGGAAUC	1058	GAUUCCAU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUAUUUCA	3247
2483	AUGGAAUC C ACCAAGAC	1059	GUCUUGGU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUCCAU	3248
2484	UGGAAUCC A CCAAGACC	1060	gencange ca	CUGAUGAG	GCCGUUAGGC	CGAA	IGAUUCCA	3249
2486	GAAUCCAC C AAGACCUG	1061	CAGGUCUU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUGGAUUC	3250
2487	AAUCCACC A AGACCUGA	1062	UCAGGUCU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGUGGAUU	3251
2492	ACCAAGAC C UGAAAUUA	1063	UAAUUUCA CU	CUGAUGAG	GCCGUUAGGC	CGAA	INCUNGEN	3252
2493	CCAAGACC U GAAAUUAA	1064	UVAAUUUC CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGUCUUGG	3253
2516	UGAUGUUC A ACACAAGC	1065	acunanan cn	CUGAUGAG	GCCGUUAGGC	CGAA	IAACAUCA	3254
2519	UGUUCAAC A CAAGCAAG	1066	CONGCONG CO	CUGAUGAG	GCCGUUAGGC	CGAA	IUUGAACA	3255
2521	UUCAACAC A AGCAAGUG	1067	CACUUGCU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUGUUGAA	3256
2525	ACACAAGC A AGUGUGUU	1068	AACACACU CUGAUGAG	IGAUGAG	GCCGUUAGGC	CGAA	ıcnnenen	3257
2536	UGUGUUUC A GCAGAACA	1069	UGUUCUGC CUGAUGAG	IGAUGAG	GCCGUUAGGC	CGAA	IAAACACA	3258
2539	GUUUCAGC A GAACAUCC	1070	GGAUGUUC CU	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGAAAC	3259
2544	AGCAGAAC A UCCUCGGG	1011	CCCGAGGA CU	CUGAUGAG	GCCGUUAGGC	CGAA	IUUCUGCU	3260
2547	AGAACAUC C UCGGGAGG	1072	CCUCCCGA CU	CUGAUGAG	GCCGUUAGGC	CGAA	IAUGUUCU	3261
2548	GAACAUCC U CGGGAGGC	1073	eccnccce cn	CUGAUGAG	GCCGUUAGGC	CGAA	IGAUGUUC	3262
2557	CGGGAGGC U CAUUUGUG	1074	CACAAAUG CU	CUGAUGAG	GCCGUUAGGC	CGAA	ICCUCCCG	3263
2559	GGAGGCUC A UUUGUGGC	1075	GCCACAAA CU	CUGAUGAG	GCCGUUAGGC	CGAA	IAGCCUCC	3264
2568	UUUGUGGC U UCUGAUGU	1076	ACAUCAGA CU	CUGAUGAG	GCCGUUAGGC	CGAA	ICCACAAA	3265
2571	GUGGCUNC N GAUGUCCC	1077	GGGACAUC CU	CUGAUGAG	GCCGUUAGGC	CGAA	IAAGCCAC	3266
2578	CUGAUGUC C CAAAUGCU	1078	AGCAUUUG CU	CUGAUGAG	GCCGUUAGGC	CGAA	IACAUCAG	3267
2579	UGAUGUCC C AAAUGCUC	1079	GAGCAUUU CU	CUGAUGAG	GCCGUUAGGC	CGAA	IGACAUCA	3268
2580	GAUGUCCC A AAUGCUCC	1080	GGAGCAUU CU	IGAUGAG	GGAGCAUU CUGAUGAG GCCGUUAGGC	CGAA	CGAA IGGACAUC	3269
2586	CCAAAUGC U CCCAUACC	1081	GGUAUGGG CU	IGAUGAG	GGUAUGGG CUGAUGAG GCCGUUAGGC CGAA ICAUUUGG	CGAA	ICAUUUGG	3270

2588	AAAUGCUC C CAUACCUG	1082	CAGGUAUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAGCAUUU	3271
2589	AAUGCUCC C AUACCUGA	1083	UCAGGUAU	CUGAUGAG	GCCGUUAGGC	CGAA	IGAGCAUU	3272
2590	AUGCUCCC A UACCUGAU	1084	AUCAGGUA	CUGAUGAG	GCCGUUAGGC	CGAA	IGGAGCAU	3273
2594	UCCCAUAC C UGAUCUCU	1085	AGAGAUCA	CUGAUGAG	GCCGUUAGGC	CGAA	IUAUGGGA	3274
2595	CCCAUACC U GAUCUCUU	1086	AAGAGAUC	CUGAUGAG	GCCGUUAGGC	CGAA	IGUAUGGG	3275
2600	ACCUGAUC U CUUCCCAC	1087	GUGGGAAG	CUGAUGAG	GCCGUUAGGC	CGAA	IAUCAGGU	3276
2602	CUGAUCUC U UCCCACCU	1088	AGGUGGGA	CUGAUGAG	GCCGUUAGGC	CGAA	IAGAUCAG	3277
2605	AUCUCUUC C CACCUGGC	1089	GCCAGGUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAAGAGAU	3278
2606	UCUCUUCC C ACCUGGCC	1090	GGCCAGGU	CUGAUGAG	GCCGUUAGGC	CGAA	IGAAGAGA	3279
2607	CUCUUCCC A CCUGGCCA	1091	UGGCCAGG	CUGAUGAG	GCCGUUAGGC	CGAA	IGGAAGAG	3280
2609	CUUCCCAC C UGGCCAAA	1092	UUUGGCCA	CUGAUGAG	GCCGUUAGGC	CGAA	IUGGGAAG	3281
2610	UUCCCACC U GGCCAAAU	1093	AUUUGGCC	CUGAUGAG	GCCGUUAGGC	CGAA	IGUGGGAA	3282
2614	CACCUGGC C AAAUCACC	1094	GGUGAUUU	CUGAUGAG	GCCGUUAGGC	CGAA	ICCAGGUG	3283
2615	ACCUGGCC A AAUCACCG	1095	CGGUGAUU	CUGAUGAG	GCCGUUAGGC	CGAA	IGCCAGGU	3284
2620	GCCAAAUC A CCGACCUG	960T	CAGGUCGG	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUUGGC	3285
2622	CAAAUCAC C GACCUGAA	1097	UUCAGGUC	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IUGAUUUG	3286
2626	UCACCGAC C UGAAGGCG	1098	CGCCUUCA	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IUCGGUGA	3287
2627	CACCGACC U GAAGGCGG	1099	CCGCCNNC	CUGAUGAG	GCCGUUAGGC	CGAA	IGUCGGUG	3288
2642	GGAAAUUC A CGGGGGCA	1100	DOCCCCC	CUGAUGAG	GCCGUUAGGC	CGAA	IAAUUUCC	3289
2650	ACGGGGGC A GUCUCAUU	1101	AAUGAGAC	CUGAUGAG	GCCGUUAGGC	CGAA	ICCCCCGU	3290
2654	GGGCAGUC U CAUUAAUC	1102	GAUUAAUG	CUGAUGAG	GCCGUUAGGC CGAA	CGAA	IACUGCCC	3291
2656	GCAGUCUC A UVAAUCUG	1103	CAGAUUAA	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IAGACUGC	3292
2663	CAUUAAUC U GACUUGGA	1104	UCCAAGUC	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUAAUG	3293
2667	AAUCUGAC U UGGACAGC	1105	GCUGUCCA	CUGAUGAG	GCCGUUAGGC	CGAA	IUCAGAUU	3294
2673	ACUUGGAC A GCUCCUGG	1106	CCAGGAGC	CUGAUGAG	GCCGUUAGGC	CGAA	IUCCAAGU	3295
2676	UGGACAGC U CCUGGGGA	1107	UCCCCAGG	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGUCCA	3296
2678	GACAGCUC C UGGGGAUG	1108	CAUCCCCA	CUGAUGAG	GCCGUUAGGC CGAA	CGAA	IAGCUGUC	3297
2679	ACAGCUCC U GGGGAUGA	1109	UCAUCCCC	CUGAUGAG	GCCGUUAGGC	CGAA	IGAGCUGU	3298
2695	AUVAUGAC C AUGGAACA	1110	UGUUCCAU	CUGAUGAG	GCCGUUAGGC	CGAA	IUCAUAAU	3299
2696	пичивысс в ивсьмсыв	1111	CUGUUCCA	CUGAUGAG	GCCGUUAGGC	CGAA	IGUCAUAA	3300
2703	CAUGGAAC A GCUCACAA	1112	UUGUGAGC	CUGAUGAG	GCCGUUAGGC	CGAA	IUUCCAUG	3301
2706	GGAACAGC U CACAAGUA	1113	UACUUGUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICUGUUCC	3302
2708	AACAGCUC A CAAGUAUA	1114	UAUACUUG	CUGAUGAG	GCCGUUAGGC CGAA	CGAA	IAGCUGUU	3303
2710	CAGCUCAC A AGUAUAUC	1115	GAUAUACU CUGAUGAG	CUGAUGAG	GCCGUUAGGC CGAA IUGAGCUG	CGAA	IUGAGCUG	3304

					- 1		5	110 411 411 41	7
2719	AGUAUAUC	A UUCGAAUA	1116	UAUUCGAA	CUGAUGAG	GCCGUUAGGC	CGAA	TAUAUACU	3305
2733	AUAAGUAC	A AGUAUUCU	1117	AGAAUACU	CUGAUGAG	GCCGUUAGGC	CGAA	IUACUUAU	3306
2741	AAGUAUUC U	U UGAUCUCA	1118	UGAGAUCA	CUGAUGAG	GCCGUUAGGC	CGAA	IAAUACUU	3307
2747	UCUUGAUC U	U CAGAGACA	1119	DGDCDCDG	CUGAUGAG	GCCGUUAGGC	CGAA	IAUCAAGA	3308
2749	UUGAUCUC	A GAGACAAG	1120	CUUGUCUC	CUGAUGAG	GCCGUUAGGC	CGAA	IAGAUCAA	3309
2755	UCAGAGAC	A AGUUCAAU	1121	AUUGAACU	CUGAUGAG	GCCGUUAGGC	CGAA	IUCUCUGA	3310
2761	ACAAGUUC	A AUGAAUCU	1122	AGAUUCAU	CUGAUGAG	GCCGUUAGGC	CGAA	IAACUUGU	3311
2769	AAUGAAUC U	U CUUCAAGU	1123	ACUUGAAG	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUCAUU	3312
2771	UGAAUCUC	UGAAUCUC U UCAAGUGA	1124	UCACUUGA	CUGAUGAG	GCCGUUAGGC	CGAA	IAGAUUCA	3313
2774	AUCUCUUC	A AGUGAAUA	1125	UAUUCACU	CUGAUGAG	GCCGUUAGGC CGAA	CGAA	IAAGAGAU	3314
2784	GUGAAUAC	U ACUGCUCU	1126	AGAGCAGU	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IUAUUCAC	3315
2787	AAUACUAC	U GCUCUCAU	1127	AUGAGAGC	CUGAUGAG	GCCGUUAGGC	CGAA	IUAGUAUU	3316
2790	ACUACUGC U	U CUCAUCCC	1128	GGGAUGAG	CUGAUGAG	GCCGUUAGGC	CGAA	ICAGUAGU	3317
2792	UACUGCUC U	U CAUCCCAA	1129	UUGGGAUG	CUGAUGAG	GCCGUUAGGC	CGAA	IAGCAGUA	3318
2794	CUGCUCUC A	A UCCCAAAG	1130	CUUUGGGA	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IAGAGCAG	3319
2797	CUCUCAUC	C CAAAGGAA	1131	unccunna	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IAUGAGAG	3320
2798	UCUCAUCC	C AAAGGAAG	1132	CONCCOON	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IGAUGAGA	3321
2799	CUCAUCCC	A AAGGAAGC	1133	GCUUCCUU	CUGAUGAG	GCCGUUAGGC	CGAA	IGGAUGAG	3322
2808	AAGGAAGC	C AACUCUGA	1134	UCAGAGUU	CUGAUGAG	GCCGUUAGGC	CGAA	ICUUCCUU	3323
2809	AGGAAGCC A	A ACUCUGAG	1135	CUCAGAGU	CUGAUGAG	GCCGUUAGGC	CGAA	IGCUUCCU	3324
2812	AAGCCAAC	AAGCCAAC U CUGAGGAA	1136	UUCCUCAG	CUGAUGAG	GCCGUUAGGC	CGAA	IUUGGCUU	3325
2814	GCCAACUC U	U GAGGAAGU	1137	ACUUCCUC	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA IAGUUGGC	3326
2824	AGGAAGUC	U UUUUGUUU	1138	AAACAAAA	CUGAUGAG	GCCGUUAGGC		CGAA IACUUCCU	3327
2837	GUUUAAAC	C AGAAAACA	1139	UGUUUUCU	CUGAUGAG	GCCGUUAGGC	CGAA	IUUUAAAC	3328
2838	UUUAAACC	A GAAAACAU	1140	AUGUUUUC	CUGAUGAG	GCCGUUAGGC	CGAA	IGUUUAAA	3329
2845	CAGAAAAC	CAGAAAAC A UUACUUUU	1141	AAAAGUAA	CUGAUGAG	GCCGUUAGGC	CGAA	IUUUUCUG	3330
2850	AACAUUAC U	U UUUGAAAA	1142	UUUUCAAA	CUGAUGAG	GCCGUUAGGC	CGAA	IUAAUGUU	3331
2863	AAAAUGGC	A CAGAUCUU	1143	AAGAUCUG	CUGAUGAG	GCCGUUAGGC	CGAA	ICCAUUUU	3332
2865	AAUGGCAC	A GAUCUUUU	1144	AAAAGAUC	CUGAUGAG	GCCGUUAGGC	CGAA	IUGCCAUU	3333
2870	CACAGAUC	U UUUCAUUG	1145	CAAUGAAA	CUGAUGAG	GCCGUUAGGC	CGAA	IAUCUGUG	3334
2875	AUCUUUUC	A UUGCUAUU	1146	AAUAGCAA	CUGAUGAG	GCCGUUAGGC	CGAA	IAAAAGAU	3335
2880	UUCAUUGC U	U AUUCAGGC	1147	GCCUGAAU	CUGAUGAG	GCCGUUAGGC	CGAA	ICAAUGAA	3336
2885	UGCUAUUC A	A GGCUGUUG	1148	CAACAGCC	CUGAUGAG	CUGAUGAG GCCGUUAGGC CGAA IAAUAGCA	CGAA	IAAUAGCA	3337
2889	AUUCAGGC U	U GUUGAUAA	1149	UUAUCAAC	CUGAUGAG	UVAUCAAC CUGAUGAG GCCGUUAGGC CGAA ICCUGAAU	CGAA	ICCUGAAU	3338

2906	GGIICGAIIC II GAAAUCAG	1150	CUGAUTUC CUGAUGAG	GCCGUUAGGC CGAA	A IAUCGACC	3339
2913	A	1151	GAUAUTUC CUGAUGAG	GCCGUUAGGC CGAA	A IAUUUCAG	3340
2922	GAAAUAUC C AACAUUGC	1152	GCAAUGUU CUGAUGAG	GCCGUUAGGC CGAA	A IAUAUUUC	3341
2923	AAAUAUCC A ACAUUGCA	1153	UGCAAUGU CUGAUGAG	GCCGUUAGGC CGAA	A IGAUAUUU	3342
2926	UAUCCAAC A UUGCACGA	1154	UCGUGCAA CUGAUGAG	GCCGUUAGGC CGAA	A IUUGGAUA	3343
2931	AACAUUGC A CGAGUAUC	1155	GAUACUCG CUGAUGAG	GCCGUUAGGC CGAA	A ICAAUGUU	3344
2940	CGAGUAUC U UUGUUUAU	1156	AUAAACAA CUGAUGAG	GCCGUUAGGC CGAA	A IAUACUCG	3345
2951	GUUUAUUC C UCCACAGA	1157	UCUGUGGA CUGAUGAG	GCCGUUAGGC CGAA	A IAAUAAAC	3346
2952	UUUAUUCC U CCACAGAC	1158	GUCUGUGG CUGAUGAG GCCGUUAGGC	GCCGUUAGGC CGAA	A IGAAUAAA	3347
2954	UAUUCCUC C ACAGACUC	1159	GAGUCUGU CUGAUGAG	GCCGUUAGGC CGAA	A IAGGAAUA	3348
2955	AUUCCUCC A CAGACUCC	1160	GGAGUCUG CUGAUGAG	GCCGUUAGGC CGAA	A IGAGGAAU	3349
2957	UCCUCCAC A GACUCCGC	1161	GCGGAGUC CUGAUGAG	GCCGUUAGGC CGAA	A IUGGAGGA	3350
2961	CCACAGAC U CCGCCAGA	1162	UCUGGCGG CUGAUGAG	GCCGUUAGGC CGAA	A IUCUGUGG	3351
2963	ACAGACUC C GCCAGAGA	1163	UCUCUGGC CUGAUGAG	GCCGUUAGGC CGAA	A IAGUCUGU	3352
2966	GACUCCGC C AGAGACAC	1164	GUGUCUCU CUGAUGAG GCCGUUAGGC	GCCGUUAGGC CGAA	A ICGGAGUC	3353
2967	ACUCCGCC A GAGACACC	1165	GGUGUCUC CUGAUGAG	CUGAUGAG GCCGUUAGGC CGAA	A IGCGGAGU	3354
2973	CCAGAGAC A CCUAGUCC	1166	GGACUAGG CUGAUGAG	GCCGUUAGGC CGAA	A IUCUCUGG	3355
2975	AGAGACAC C UAGUCCUG	1167	CAGGACUA CUGAUGAG	GCCGUUAGGC CGAA	A IUGUCUCU	3356
2976	GAGACACC U AGUCCUGA	1168	UCAGGACU CUGAUGAG	GCCGUUAGGC CGAA	A IGUGUCUC	3357
2981	ACCUAGUC C UGAUGAAA	1169	UUUCAUCA CUGAUGAG	GCCGUUAGGC CGAA	A IACUAGGU	3358
2982	CCUAGUCC U GAUGAAAC	1170	GUUUCAUC CUGAUGAG GCCGUUAGGC	GCCGUUAGGC CGAA	A IGACUAGG	3359
2994	GAAACGUC U GCUCCUUG	1171	CAAGGAGC CUGAUGAG	GCCGUUAGGC CGAA	A IACGUUUC	3360
2997	ACGUCUGC U CCUUGUCC	1172	GGACAAGG CUGAUGAG	GCCGUUAGGC CGAA	A ICAGACGU	3361
2999	GUCUGCUC C UUGUCCUA	1173	UAGGACAA CUGAUGAG	GCCGUUAGGC CGAA	A IAGCAGAC	3362
3000	UCUGCUCC U UGUCCUAA	1174	UNAGGACA CUGAUGAG	GCCGUUAGGC CGAA	A IGAGCAGA	3363
3005	UCCUUGUC C UAAUAUUC	1175	GAAUAUUA CUGAUGAG	GCCGUUAGGC CGAA	A IACAAGGA	3364
3006	CCUUGUCC U AAUAUUCA	1176	UGAAUAUU CUGAUGAG	CUGAUGAG GCCGUUAGGC CGAA	A IGACAAGG	3365
3014	UAAUAUUC A UAUCAACA	1177	UGUUGAUA CUGAUGAG	CUGAUGAG GCCGUUAGGC CGAA	A IAAUAUUA	3366
3019	UUCAUAUC A ACAGCACC	1178	GGUGCUGU CUGAUGAG	GCCGUUAGGC CGAA	A IAUAUGAA	3367
3022	AUAUCAAC A GCACCAUU	1179	AAUGGUGC CUGAUGAG	GCCGUUAGGC CGAA	A IUUGAUAU	3368
3025	UCAACAGC A CCAUUCCU	1180	AGGAAUGG CUGAUGAG	GCCGUUAGGC CGAA	- 1	3369
3027	AACAGCAC C AUUCCUGG	1181	CCAGGAAU CUGAUGAG	CUGAUGAG GCCGUUAGGC CGAA	A IUGCUGUU	3370
3028	ACAGCACC A UUCCUGGC	1182	GCCAGGAA CUGAUGAG GCCGUUAGGC	GCCGUUAGGC CGA	CGAA IGUGCUGU	3371
3032	CACCAUUC C UGGCAUUC	1183	GAAUGCCA CUGAUGAG GCCGUUAGGC CGAA IAAUGGUG	GCCGUUAGGC CGA	A IAAUGGUG	3372

3033	ACCAUUCC U GGCAUUCA	_	1184	UGAAUGCC	CUGAUGAG	UGAAUGCC CUGAUGAG GCCGUUAGGC	CGAA	IGAAUGGU	3373
3037	UUCCUGGC A UUCACAUU	\vdash	1185	AAUGUGAA	CUGAUGAG	GCCGUUAGGC	CGAA	ICCAGGAA	3374
3041	UGGCAUUC A CAUUUUAA	+	1186	UVAAAAUG	ı	CUGAUGAG GCCGUUAGGC	CGAA	CGAA IAAUGCCA	3375
3043	GCAUUCAC A UUUUAAAA		1187	UUUUAAAA	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	IUGAAUGC	3376
3077	AGGAGAAC U GCAGCUGU	t	1188	ACAGCUGC	CUGAUGAG	GCCGUUAGGC	CGAA	IUUCUCCU	3377
3080	AGAACUGC A GCUGUCAA	+	1189	UUGACAGC	CUGAUGAG	GCCGUUAGGC	CGAA	CGAA ICAGUUCU	3378
3083	ACUGCAGC U GUCAAUAG		1190	CUAUUGAC	CUGAUGAG	CUAUUGAC CUGAUGAG GCCGUUAGGC	CGAA	CGAA ICUGCAGU	3379
3087	CAGCUGUC A AUAGCCUA	\vdash	1191	UAGGCUAU	CUGAUGAG	UAGGCUAU CUGAUGAG GCCGUUAGGC	CGAA	IACAGCUG	3380
3093	UCAAUAGC C UAGGGCUG	 	1192	CAGCCCUA		CUGAUGAG GCCGUUAGGC	CGAA	ICUAUUGA	3381
3094	CAAUAGCC U AGGGCUGA		1193	UCAGCCCU	1	CUGAUGAG GCCGUUAGGC	CGAA	CGAA IGCUAUUG	3382
3100	CCUAGGGC U GAAUUUUU		1194	AAAAAUUC	CUGAUGAG	CUGAUGAG GCCGUUAGGC	CGAA	ICCCUAGG	3383
3112	UUUUUGUC A GAUAAAUA	-	1195	UAUUUAUC	CUGAUGAG	GCCGUUAGGC	CGAA	IACAAAAA	3384
3130	AAUAAAUC A UUCAUCCU		1196	AGGAUGAA	CUGAUGAG	GCCGUUAGGC	CGAA	IAUUUAUU	3385
3134	AAUCAUUC A UCCUUUUU	┢	1197	AAAAAGGA	CUGAUGAG	AAAAAGGA CUGAUGAG GCCGUUAGGC	CGAA	IAAUGAUU	3386
3137	CAUUCAUC C UUUUUUUG	├	1198	CAAAAAA	CUGAUGAG	CAAAAAA CUGAUGAG GCCGUUAGGC	CGAA	IAUGAAUG	3387
3138	AUUCAUCC U UUUUUGA	\vdash	1199	UCAAAAAA	CUGAUGAG	GCCGUUAGGC	CGAA	IGAUGAAU	3388
3160	AAAUUUUC U AAAAUGUA		1200	UACAUUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IAAAAUUU	3389
3177	UUUUAGAC U UCCUGUAG	T	1201	CUACAGGA	CUGAUGAG	CUACAGGA CUGAUGAG GCCGUUAGGC	CGAA	IUCUAAAA	3390
3267	UUUUAGAC U UCCUGUAG	\vdash	1201	CUACAGGA	CUGAUGAG	GCCGUUAGGC	CGAA	IUCUAAAA	3390
3180	UAGACUUC C UGUAGGGG	1	1202	CCCCUACA	CUGAUGAG	GCCGUUAGGC	CGAA	IAAGUCUA	3391
3270	UAGACUUC C UGUAGGGG	┢	1202	CCCCUACA	CUGAUGAG	CCCCUACA CUGAUGAG GCCGUUAGGC	CGAA	IAAGUCUA	3391
3181	AGACUUCC U GUAGGGGG	3999	1203	CCCCCUAC	CUGAUGAG	GCCGUUAGGC	CGAA	IGAAGUCU	3392
3271	AGACUUCC U GUAGGGGG	\vdash	1203	CCCCCUAC	CUGAUGAG	GCCGUUAGGC	CGAA	IGAAGUCU	3392
3198	CGAUAUAC U AAAUGUAU		1204	AUACAUUU	CUGAUGAG	AUACAUUU CUGAUGAG GCCGUUAGGC CGAA	CGAA	IUAUAUCG	3393
3251	CGAUAUAC U AAAUGUAU	SUAU	1204	AUACAUUU	CUGAUGAG	GCCGUUAGGC	CGAA	IUAUAUCG	3393
3214	UAUAGUAC A UUUAUACU	JACU	1205	AGUAUAAA	CUGAUGAG	GCCGUUAGGC	CGAA	IUACUAUA	3394
3222	AUUUAUAC U AAAUGUAU		1206	AUACAUUU	CUGAUGAG	AUACAUTU CUGAUGAG GCCGUUAGGC	CGAA	CGAA IUAUAAAU	3395
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3233	3233 AUGUAUUC C UGUAGGGG 1207	1207	CCCCUACA CUGAUGAG GCCGUUAGGC CGAA IAAUACAU	3396
3234	3234 UGUAUUCC U GUAGGGGG 1208 C	1208	CCCCCUAC CUGAUGAG GCCGUUAGGC CGAA IGAAUACA	3397
3296	3296 HAAAAHGC U AAACAACU 1209	1209	AGUUGUUU CUGAUGAG GCCGUUAGGC CGAA ICAUUUUA	3398
3301	3301 UGCUAAAC A ACUGGGUA 1210	1210	UACCCAGU CUGAUGAG GCCGUUAGGC CGAA IUUUAGCA	3399

Input Sequence = NM_001285. Cut Site = CH/.

Arm Length = 8. Core Sequence = CUGAUGAG GCCGUUAGGC CGAA
Underlined region can be any X sequence or linker, as described herein.

NM_001285 (Homo sapiens chloride channel, calcium activated, 1 (CLCA1) mRNA, 3311 bp)

Table V: Human CLCA1 G-cleaver Ribozyme and Target Sequence

Pos	Substrate	Seq ID	Ribozyme	Rz Seq ID No.
40	AUAUAAUU G AAUAUUUU	1211	AAAAUAUU UGAUG GCAUGCACUAUGC GCG AAUUAUAU	3400
67	AU	1212	CACCUCUU UGAUG GCAUGCACUAUGC GCG AUGCUCCC	3401
78	GAGGUGUU G AGGUUAUG	1213	CAUAACCU UGAUG GCAUGCACUAUGC GCG AACACCUC	3402
106	CG G	1214	UCUGCCUU UGAUG GCAUGCACUAUGC GCG AGCUGUGC	3403
134	ACAAGUAC G CAAUUUGA	1215	UCAAAUUG UGAUG GCAUGCACUAUGC GCG GUACUUGU	3404
141	CGCAAUUU G AGACUAAG	1216	CUUAGUCU UGAUG GCAUGCACUAUGC GCG AAAUUGCG	3405
172	CUCCUAUU G AAGACAAG	1217	CUUGUCUU UGAUG GCAUGCACUAUGC GCG AAUAGGAG	3406
223	AGACCUGU G AUAAACCA	1218	UGGUUUAU UGAUG GCAUGCACUAUGC GCG ACAGGUCU	3407
237	CCACUUCC G ANAAGUUG	1219	CAACUUAU UGAUG GCAUGCACUAUGC GCG GGAAGUGG	3408
312	CGUAACCC G CAUUUUCC	1220	GGADADUG UGAUG GCAUGCACUAUGC GCG GGGUUACG	3409
384	B G	1221	UGAAGAAU UGAUG GCAUGCACUAUGC GCG AAGAUGAA	3410
411	CU G	1222	GAAUUACU UGAUG GCAUGCACUAUGC GCG AGGGCCCC	3411
432	AUUCAGCU G AACAACAA	1223	UNGUUGUU UGAUG GCAUGCACUAUGC GCG AGCUGAAU	3412
448	ט	1224	AAUGCCUU UGAUG GCAUGCACUAUGC GCG AUAGCCAU	3413
463	UUGUCGUU G CAAUCGAC	1225	GUCGAUUG UGAUG GCAUGCACUAUGC GCG AACGACAA	3414
469	UUGCAAUC G ACCCCAAU	1226	AUUGGGGU UGAUG GCAUGCACUAUGC GCG GAUUGCAA	3415
480	ט	1227	UCUUCUGG UGAUG GCAUGCACUAUGC GCG ACAUUGGG	3416
490	CAGAAGAU G AAACACUC	1228	GAGUGUUU UGAUG GCAUGCACUAUGC GCG AUCUUCUG	3417
522		1229	GCCUGGGU UGAUG GCAUGCACUAUGC GCG ACCAUGUC	3418
547	AUCUGUUU G AAGCUACA	1230	UGUAGCUU UGAUG GCAUGCACUAUGC GCG AAACAGAU	3419
563	AGGAAAGC G AUUUUAUU	1231	AAUAAAAU UGAUG GCAUGCACUAUGC GCG GCUUUCCU	3420
583	AAAAUGUU G CCAUUUUG	1232	CAAAAUGG UGAUG GCAUGCACUAUGC GCG AACAUUUU	3421
591	GCCAUUUU G AUUCCUGA	1233	UCAGGAAU UGAUG GCAUGCACUAUGC GCG AAAAUGGC	3422
598	UGAUUCCU G AAACAUGG	1234	CCAUGUUU UGAUG GCAUGCACUAUGC GCG AGGAAUCA	3423
619	CAAAGGCU G ACUAUGUG	1235	CACAUAGU UGAUG GCAUGCACUAUGC GCG AGCCUUUG	3424
627	GACUAUGU G AGACCAAA	1236	UNGGUCU UGAUG GCAUGCACUAUGC GCG ACAUAGUC	3425
640	CAAAACUU G AGACCUAC	1237	GUAGGUCU UGAUG GCAUGCACUAUGC GCG AAGUUUUG	3426
655	ACAAAAU G CUGAUGUU	1238	AACAUCAG UGAUG GCAUGCACUAUGC GCG AUUUUUGU	3427

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3428	3429	3430	3431	3432	3433	3434	3435	3436	3437	3438	3439	3440	3441	3442	3443	3444	3445	3446	3447	3448	3449	3450	3451	3452	3453	3454	3455	3456	3457	3458	3455	3460
CAGAACAU UGAUG GCAUGCACUAUGC GCG AGCAUUUU	AGACUCAG UGAUG GCAUGCACUAUGC GCG AACCAGAA	AGUAGACU UGAUG GCAUGCACUAUGC GCG AGCAACCA	GGGUUCAU UGAUG GCAUGCACUAUGC GCG AUUACCUG	GUAGGGUU UGAUG GCAUGCACUAUGC GCG AUCAUUAC	CAUCUGCU UGAUG GCAUGCACUAUGC GCG AGUGUAGG	GAUCCUUU UGAUG GCAUGCACUAUGC GCG ACCCUUCU		UUUUCCUG UGAUG GCAUGCACUAUGC GCG AAUGAAAU	UCCAUAUU UGAUG GCAUGCACUAUGC GCG AGCUAACU	AGCCCACU UGAUG GCAUGCACUAUGC GCG AUGGACAA	CUCCCCAU UGAUG GCAUGCACUAUGC GCG GUAGAUGA	GUACUCGU UGAUG GCAUGCACUAUGC GCG AAAUACUC	AUUGUACU UGAUG GCAUGCACUAUGC GCG GUCAAAUA	UUUCUCAU UGAUG GCAUGCACUAUGC GCG AUUAUUGU	GAAUUUCU UGAUG GCAUGCACUAUGC GCG AUCAUUAU	UGAAUGUG UGAUG GCAUGCACUAUGC GCG AUCUUUUG	UCCUUUUU UGAUG GCAUGCACUAUGC GCG AUAGAGUC	AACAAACU UGAUG GCAUGCACUAUGC GCG ACAUCCUU	CCGUCUGG UGAUG GCAUGCACUAUGC GCG GGGAUUGG	AUGUUGUG UGAUG GCAUGCACUAUGC GCG AAACAUUA	UAUAGAAU UGAUG GCAUGCACUAUGC GCG AACAUGUU	ACAGAAUU UGAUG GCAUGCACUAUGC GCG AACUAUAG	GGAGAUUG UGAUG GCAUGCACUAUGC GCG AUUUUUGA	AUGUGCUU UGAUG GCAUGCACUAUGC GCG GGAGAUUG	UCACGGAU UGAUG GCAUGCACUAUGC GCG ACUUCCCA	CUCAGAAU UGAUG GCAUGCACUAUGC GCG ACGGAUCA	AAAGUCCU UGAUG GCAUGCACUAUGC GCG AGAAUCAC	UGUGUUGU UGAUG GCAUGCACUAUGC GCG AUAGGAGU	AUCUGCAG UGAUG GCAUGCACUAUGC GCG AAUGAGAA	CCAAUCUG UGAUG GCAUGCACUAUGC GCG AGCAAUGA	AGAUTUGU UGAUG GCAUGCACUAUGC GCG AAGGACUA	UNACCAGU UGAUG GCAUGCACUAUGC GCG GCCAUGCU
1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271
AAAAUGCU G AUGUUCUG	UUCUGGUU G CUGAGUCU	D D	D	D G	Ö	מ	D D	D D	AGUUAGCU G AAUAUGGA	UUGUCCAU G AGUGGGCU	UCAUCUAC G AUGGGGAG	D	ט	ACAAUAAU G AUGAGAAA	AUAAUGAU G AGAAAUUC	D D	GACUCUAU G AAAAAGGA	AAGGAUGU G AGUUUGUU	ט	ט	ט	D	D D	CAAUCUCC G AAGCACAU	UGGGAAGU G AUCCGUGA	UGAUCCGU G AUUCUGAG	GUGAUUCU G AGGACUUU		UUCUCAUU G CUGCAGAU	D D	UAGUCCUU G ACAAAUCU	AGCAUGGC G ACUGGUAA
658	670	673	694	697	709	739	760	769	787	820	836	850	853	865	868	980	1009	1021	1040	1069	1081	1093	1151	1160	1176	1183	1189	1215	1248	1251	1285	1305

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3461	3462	3463	3464	3465	3466	3467	3468	3469	3470	3471	3472	3473	3474	3475	3476	3477	3478	3479	3480	3481	3482	3483	3484	3485	3486	3487	3488	3489	3490	3491	3492	3493
GCAUGCACUAUGC GCG	AUG GCAUGCACUAUGC GCG GAUUGAGG	UGAUG GCAUGCACUAUGC GCG AGUCGAUU	UGAUG GCAUGCACUAUGC GCG AGGAAAAG	UGAUG GCAUGCACUAUGC GCG AGCAGGAA	AUG GCAUGCACUAUGC GCG AACUGUCU	AUG GCAUGCACUAUGC GCG ACCAUCCC	GCG	UGAUG GCAUGCACUAUGC GCG ACUGUCAA	UGAUG GCAUGCACUAUGC GCG AGCACUGU	UGAUG GCAUGCACUAUGC GCG ACUUUGUA	AUG GCAUGCACUAUGC GCG ACUGCCAC	UGAUG GCAUGCACUAUGC GCG GAGUGUGU	GCG	UGAUG GCAUGCACUAUGC GCG AGAUGGAC	AUG GCAUGCACUAUGC GCG GAAGCCCG		ggg	UGAUG GCAUGCACUAUGC GCG AGAUCCAU	UGAUG GCAUGCACUAUGC GCG ACAAUUUC	UGAUG GCAUGCACUAUGC GCG AGCACAAU	AUG GCAUGCACUAUGC GCG AGCAGCAC	UGAUG GCAUGCACUAUGC GCG ACCCACUU	GCG	ggg	GCAUGCACUAUGC GCG	UUGAGCUG UGAUG GCAUGCACUAUGC GCG AGAGGGCC	AUG GCAUGCACUAUGC GCG AUUUUGGA	UGAUG GCAUGCACUAUGC GCG AUAUGUCU	UGAUG GCAUGCACUAUGC GCG AAUGAGGC	UGAUG GCAUGCACUAUGC GCG AUCAAUGA	GCAUGCACUAUGC GCG	AUG GCAUGCACUAUGC GCG AAGCUGGA
GAUUGAGG UGAUG	GAUUCAGU UGAUG	GCUUGAUU UGA	GUCUGCAG UGA	ACUGUCUG UG	CCCCAGCU UGAUG	UCAAAUGU UGAUG	AGCACUGU UG	AUGGGCAG UG	UACAUGGG UG	UAUGAGUU UG	GUCCCUGU UGAUG	ncanange ne	AGCUGCUG UG	ecceene ne	AUGCCGAU UGAUG	UUCCUAAU UGAUG	AGAUCCAU UG	CACAAUUU UG	GUCAGCAG UG	UCCGUCAG UG	CCAUCCGU UGAUG	CGUUAAAG UG	UUUGACCU UG	GAUGAUGG UG	CCCCAAAG UGAUG	UUGAGCUG UG	CCUCCUGU UGAUG	AUCUGAAG UG	AAAAGCAU UG	CCCAAAAG UG	GGAUGGAG UGAUG	CUVACUCU UGAUG
1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304
UGGUAACC G CCUCAAUC	CCUCAAUC G ACUGAAUC	AAUCGACU G AAUCAAGC	O	UUCCUGCU G CAGACAGU	AGACAGUU G AGCUGGGG	GGGAUGGU G ACAUUUGA	UGACAUUU G ACAGUGCU	UUGACAGU G CUGCCCAU	ACAGUGCU G CCCAUGUA	UACAAAGU G AACUCAUA	GUGGCAGU G ACAGGGAC	ACACACUC G CCAAAAGA	D C	GUCCAUCU G CAGCGGGC	CGGGCUUC G AUCGGCAU	UUUACUGU G AUUAGGAA	AUCCAACU G AUGGAUCU	AUGGAUCU G AAAUUGUG	GAAAUUGU G CUGCUGAC	G	GUGCUGCU G ACGGAUGG	AAGUGGGU G CUUUAACG	GCUUUAAC G AGGUCAAA	AAAGUGGU G CCAUCAUC	ACACAGUC G CUUUGGGG	GGCCCUCU G CAGCUCAA	UCCAAAAU G ACAGGAGG	AGACAUAU G CUUCAGAU	GCCUCAUU G AUGCUUUU	UCAUUGAU G CUUUUGGG	CUCUCAGC G CUCCAUCC	UCCAGCUU G AGAGUAAG
1316	1325	1329	1353	1356	1366	1392	1399	1405	1408	1423	1450	1465	1480	1508	1520	1536	1558	1567	1575	1578	1581	1613	1621	1639	1657	1672	1704	1726	1759	1762	1805	1819

		T305	GUGCCAUD UGAUG GCAUGCACUGC GCG AUCCACUG	3494
1869	GGCACAGU G AUCGUGGA	1306	UCCACGAU UGAUG GCAUGCACUAUGC GCG ACUGUGCC	3495
1923	UGGACAAC G CAGCCUCC	1307	GGAGGCUG UGAUG GCAUGCACUAUGC GCG GUUGUCCA	3496
2026	CAGGCAUU G CUAAGGUU	1308	AACCUUAG UGAUG GCAUGCACUAUGC GCG AAUGCCUG	3497
2055	UACAGUCU G CAAGCAAG	1309	CUUGCUUG UGAUG GCAUGCACUAUGC GCG AGACUGUA	3498
2076	CAAACCUU G ACCCUGAC	1310	GUCAGGGU UGAUG GCAUGCACUAUGC GCG AAGGUUUG	3499
2082	UUGACCCU G ACUGUCAC	1311	GUGACAGU UGAUG GCAUGCACUAUGC GCG AGGGUCAA	3500
2098	CGUCCCGU G CGUCCAAU	1312	AUUGGACG UGAUG GCAUGCACUAUGC GCG ACGGGACG	3501
2107	CGUCCAAU G CUACCCUG	1313	CAGGGUAG UGAUG GCAUGCACUAUGC GCG AUUGGACG	3502
2115	GCUACCCU G CCUCCAAU	1314	AUUGGAGG UGAUG GCAUGCACUAUGC GCG AGGGUAGC	3503
2130	AUDACAGU G ACUUCCAA	1315	UUGGAAGU UGAUG GCAUGCACUAUGC GCG ACUGUAAU	3504
2142	UCCAAAAC G AACAAGGA	1316	UCCUUGUU UGAUG GCAUGCACUAUGC GCG GUUUUGGA	3505
2185	UAGUUUAU G CAAAUAUU	1317	AAUAUUUG UGAUG GCAUGCACUAUGC GCG AUAAACUA	3506
2195	AAAUAUUC G CCAAGGAG	1318	CUCCUUGG UGAUG GCAUGCACUAUGC GCG GAAUAUUU	3507
2238	ACAGCCCU G AUUGAAUC	1319	GAUUCAAU UGAUG GCAUGCACUAUGC GCG AGGGCUGU	3508
2242	CCCUGAUU G AAUCAGUG	1320	CACUGAUU UGAUG GCAUGCACUAUGC GCG AAUCAGGG	3509
2250	GAAUCAGU G AAUGGAAA	1321	UUUCCAUU UGAUG GCAUGCACUAUGC GCG ACUGAUUC	3510
2296	GAGCAGGU G CUGAUGCU	1322	AGCAUCAG UGAUG GCAUGCACUAUGC GCG ACCUGCUC	3511
2299	CAGGUGCU G AUGCUACU	1323	AGUAGCAU UGAUG GCAUGCACUAUGC GCG AGCACCUG	3512
2302	GUGCUGAU G CUACUAAG	1324	CUUAGUAG UGAUG GCAUGCACUAUGC GCG AUCAGCAC	3513
2314	CUAAGGAU G ACGGUGUC	1325	GACACCGU UGAUG GCAUGCACUAUGC GCG AUCCUUAG	3514
2347	CAACUUAU G ACACGAAU	1326	AUUCGUGU UGAUG GCAUGCACUAUGC GCG AUAAGUUG	3515
2352	UAUGACAC G AAUGGUAG	1327	CUACCAUU UGAUG GCAUGCACUAUGC GCG GUGUCAUA	3516
2376	GUAAAAGU G CGGGCUCU	1328	AGAGCCCG UGAUG GCAUGCACUAUGC GCG ACUUUUAC	3517
2398	GAGUUAAC G CAGCCAGA	1329	UCUGGCUG UGAUG GCAUGCACUAUGC GCG GUUAACUC	3518
2415	CGGAGAGU G AUACCCCA	1330	UGGGGUAU UGAUG GCAUGCACUAUGC GCG ACUCUCCG	3519
2458	GCUGGAUU G AGAAUGAU	1331	AUCAUUCU UGAUG GCAUGCACUAUGC GCG AAUCCAGC	3520
2464	UUGAGAAU G AUGAAAUA	1332	UAUTUCAU UGAUG GCAUGCACUAUGC GCG AUTCUCAA	3521
2467	AGAAUGAU G AAAUACAA	1333	UUGUAUUU UGAUG GCAUGCACUAUGC GCG AUCAUUCU	3522
2494	CAAGACCU G AAAUUAAU	1334	AUVAAUUU UGAUG GCAUGCACUAUGC GCG AGGUCUUG	3523
2509	AUAAGGAU G AUGUUCAA	1335	UUGAACAU UGAUG GCAUGCACUAUGC GCG AUCCUUAU	3524
2572	UGGCUUCU G AUGUCCCA	1336	UGGGACAU UGAUG GCAUGCACUAUGC GCG AGAAGCCA	3525
2584	אנועטטטוט ט וועעעעטטטו	1337	ASSENTITE SOS OSTITUTOS SITUSTI SESSENTALI	3526

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3527	3528	3529	3530	3531	3532	3533	3534	3535	3536	3537	3538	3539	3540	3541	3542	3543	3544	3545	3546	3547	3548	3549	3550	3551	3552	3553	3553	3554	3555	3556	ro	3558
GAAGAGAU UGAUG GCAUGCACUAUGC GCG AGGUAUGG	CUUCAGGU UGAUG GCAUGCACUAUGC GCG GGUGAUUU	UCCGCCUU UGAUG GCAUGCACUAUGC GCG AGGUCGGU	GUCCAAGU UGAUG GCAUGCACUAUGC GCG AGAUUAAU	GUCAUAAU UGAUG GCAUGCACUAUGC GCG AUCCCCAG	UCCAUGGU UGAUG GCAUGCACUAUGC GCG AUAAUCAU	UACUUAUU UGAUG GCAUGCACUAUGC GCG GAAUGAUA	UGAUG GCAUGCACUAUGC GCG	AAGAGAUU UGAUG GCAUGCACUAUGC GCG AUUGAACU	GUAGUAUU UGAUG GCAUGCACUAUGC GCG ACUUGAAG	GAUGAGAG UGAUG GCAUGCACUAUGC GCG AGUAGUAU	GACUUCCU UGAUG GCAUGCACUAUGC GCG AGAGUUGG	GCCAUUUU UGAUG GCAUGCACUAUGC GCG AAAAGUAA	CUGAAUAG UGAUG GCAUGCACUAUGC GCG AAUGAAAA	GACCUUAU UGAUG GCAUGCACUAUGC GCG AACAGCCU	UUUCAGAU UGAUG GCAUGCACUAUGC GCG GACCUUAU	UCUGAUUU UGAUG GCAUGCACUAUGC GCG AGAUCGAC	UACUCGUG UGAUG GCAUGCACUAUGC GCG AAUGUUGG	AAGAUACU UGAUG GCAUGCACUAUGC GCG GUGCAAUG	1	UGAUG	AGACGUUU UGAUG GCAUGCACUAUGC GCG AUCAGGAC	ACAAGGAG UGAUG GCAUGCACUAUGC GCG AGACGUUU	1	CAAAAAUU UGAUG GCAUGCACUAUGC GCG AGCCCUAG	UUUAUAAU UGAUG GCAUGCACUAUGC GCG AAAAAAAG	UAGUAUAU UGAUG GCAUGCACUAUGC GCG GCCCCCUA	UAGUAUAU UGAUG GCAUGCACUAUGC GCG GCCCCCUA	UAUUUUAU UGAUG GCAUGCACUAUGC GCG GCCCCCUA	UNGUIUNAG UGAUG GCAUGCACUAUGC GCG AUTUUAUU	UGAUG	CCCUUDAAA UGAUG GCAUGCACUAUGC GCG AAGAAAAU	AACCUCAA UGAUG GCAUGCACUAUGC GCG ACCUCUUC
1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1364	1365	1366	1367	1368	1369
CCAUACCU G AUCUCUUC) c	וכ	י כי	י כי) c) c	י ס	0	ין	ט	ರ	ď	ט	ט	ני) c	ט		יס	פ פ	י כי	כי	יי	ď) C	ים	ין	ני	י כי	ט	ט	ט
2596	2623	2622	2664	7696	2692	2723	2743	2764	2778	2788	2815	2854	2878	2893	2000	2000	2929	2023	2000	4000	7000	2000	2078	2002	3145	3191	3244	2287	2000	22.24	52	75

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AAGAUAUU	G UUAUCAUU	1371	AAUGAUAA UGAUG GC	GCAUGCACUAUGC GCG	AAUAUCUU	3560
AAAGACCU	G UGAUAAAC	1372	GUUUAUCA UGAUG GC	GCAUGCACUAUGC GCG	AGGUCUUU	3561
GGAAACGU	G UGUCUAUA	1373	UAUAGACA UGAUG GC	GCAUGCACUAUGC GCG	ACGUUUCC	3562
AAACGUGU	G UCUAUAUU	1374	AAUAUAGA UGAUG GC	GCAUGCACUAUGC GCG ACACGUUU	ACACGUUU	3563
UCAUAUCU	G UAUAUAUA	1375	UAUAUAUA UGAUG GC	GCAUGCACUAUGC GCG AGAUAUGA	AGAUAUGA	3564
AGGGAGAU	G UACAGCAA	1376	UUGCUGUA UGAUG GC	GCAUGCACUAUGC GCG	AUCUCCCU	3565
AGAGUUCU	G UGUUCAUC	1377	GAUGAACA UGAUG GC	GCAUGCACUAUGC GCG	AGAACUCU	3566
AGUUCUGU	G UUCAUCUU	1378	AAGAUGAA UGAUG GC	GCAUGCACUAUGC GCG	ACAGAACU	3567
AAGGCAUU	g ucguugca	1379	UGCAACGA UGAUG GC	UGAUG GCAUGCACUAUGC GCG	AAUGCCUU	3568
ACCCCAAU	G UGCCAGAA	1380	UUCUGGCA UGAUG GC	GCAUGCACUAUGC GCG	AUUGGGGU	3569
GCAUCUCU	G UAUCUGUU	1381	AACAGAUA UGAUG GC	GCAUGCACUAUGC GCG	AGAGAUGC	3570
CUGUAUCU	G UUUGAAGC	1382	GCUUCAAA UGAUG GC	GCAUGCACUAUGC GCG	AGAUACAG	3571
UCAAAAAU	G UUGCCAUU	1383	AAUGGCAA UGAUG GC	GCAUGCACUAUGC GCG	AUUUUUGA	3572
CUGACUAU	G UGAGACCA	1384	UGGUCUCA UGAUG GC	UGAUG GCAUGCACUAUGC GCG AUAGUCAG	AUAGUCAG	3573
AUGCUGAU	g uncueeuu	1385	AACCAGAA UGAUG GC	GCAUGCACUAUGC GCG	GCG AUCAGCAU	3574
GGGCAACU	G UGGAGAGA	1386	UCUCUCCA UGAUG GC	GCAUGCACUAUGC GCG	AGUUGCCC	3575
AGGCAUUU	G UCCAUGAG	1387	CUCAUGGA UGAUG GC	GCAUGCACUAUGC GCG	AAAUGCCU	3576
AGUAAGAU	G UUCAGCAG	1388	CUGCUGAA UGAUG GC	GCAUGCACUAUGC GCG	AUCUUACU	3577
GUACAAAU	G UAGUAAAG	1389	CUUVACUA UGAUG GC	UGAUG GCAUGCACUAUGC GCG	AUUUGUAC	3578
AAAGAAGU	G UCAGGGAG	1390	CUCCCUGA UGAUG GC	GCAUGCACUAUGC GCG	ACUUCUUU	3579
AGGCAGCU	G UUACACCA	1391	UGGUGUAA UGAUG GC	GCAUGCACUAUGC GCG	AGCUGCCU	3580
AAAAGGAU	G UGAGUUUG	1392	CAAACUCA UGAUG GC	GCAUGCACUAUGC GCG	AUCCUUUU	3581
GUGAGUUU	G UUCUCCAA	1393	UUGGAGAA UGAUG GCAUGCACUAUGC	BCB	AAACUCAC	3582
UCUAUAAU	G UUUGCACA	1394	UGUGCAAA UGAUG GC	UGAUG GCAUGCACUAUGC GCG	AUUAUAGA	3583
CACAACAU	G UUGAUUCU	1395	AGAAUCAA UGAUG GC	GCAUGCACUAUGC GCG	AUGUUGUG	3584
UGAAUUCU	G UACAGAAC	1396	GUUCUGUA UGAUG GC	GCAUGCACUAUGC GCG	AGAAUUCA	3585
AAAGAAUU	G UGUGUUUA	1397	UAAACACA UGAUG GC	GCAUGCACUAUGC GCG	AAUUCUUU	3586
AGAAUUGU	G UGUUUAGU	1398	ACUAAACA UGAUG GC	GCAUGCACUAUGC GCG	ACAAUUCU	3587
AAUUGUGU	G UUUAGUCC	1399	GGACUAAA UGAUG GC	UGAUG GCAUGCACUAUGC GCG	ACACAAUU	3588
CUGCCCAU	G UACAAAGU	1400	ACUUUGUA UGAUG GC	GCAUGCACUAUGC GCG	AUGGGCAG	3589
CAUUUACU	G UGAUUAGG	1401	CCUAAUCA UGAUG GC	GCAUGCACUAUGC GCG	AGUAAAUG	3590
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1403
CUGAGAGA
1405 AUAAGAAA UGAUG GCAUGCACUAUGC
1406 GUCCACUA UGAUG GCAUGCACUAUGC
1407 GGACGUGA
1408 GGCUGUGA UGAUG GCAUGCACUAUGC
UGAGUAGA UGAUG GCAUGCACUAUGC
CACUUUUA UGAUG GCAUGCACUAUGC GCG ACUGUAUC
1411 GGUAUGUA UGAUG
1412 GUGUUGAA UGAUG
1413 CUGAAACA UGAUG GCAUGCACUAUGC GCG ACUUGCUU
UGCUGAAA UGAUG
1415 AGAAGCCA UGAUG GCAUGCACUAUGC GCG
1416 AUUUGGGA UGAUG GCAUGCACUAUGC GCG
1417 GGUUUAAA UGAUG
1418 CUUAUCAA UGAUG GCAUGCACUAUGC GCG AGCCUGAA
1419 GGAAUAAA UGAUG GCAUGCACUAUGC GCG
1420 UAUUAGGA UGAUG
1421 CACUUCCA UGAUG GCAUGCACUAUGC GCG AUAAUUUU
1422 GCUAUUGA UGAUG GCAUGCACUAUGC GCG
1423 UUAUCUGA UGAUG
1424 CUAAAAUA UGAUG GCAUGCACUAUGC GCG
1425 GCCCCCUA UGAUG GCAUGCACUAUGC GCG
1425 GCCCCCUA UGAUG GCAUGCACUAUGC GCG AGGAAGUC
1426 ACUAUAUA UGAUG
1427 CAGGAAUA UGAUG
1428 GCCCCCUA UGAUG GCAUGCACUAUGC GCG AGGAAUAC
1429 CUAAAAUA UGAUG

Input Sequence = NM_001285. Cut Site = YG/M or UG/U. Arm Length = 8. Core Sequence = UGAUG GCAUGCACUAUGC GCG NM_001285 (Homo sapiens chloride channel, calcium activated, 1 (CLCA1) mRNA, 3311 bp)

Table	Fable VI: Human CLCA1 Zinzyme and Target Sequence	and Tar		249.021
Pos	Substrate	Seq ID	Zinzyme	Rz Seq ID
134	ACAAGUAC G CAAUUUGA	1215	UCAAAUUG GCCGAAAGGCGAGUGAGGUCU GUACUUGU	3619
312	CGUAACCC G CAUTUUCC	1220	GGAAAAUG GCCGAAAGGCGAGUGAGGUCU GGGUUACG	3620
463	UUGUCGUU G CAAUCGAC	1225	GUCGAUUG GCCGAAAGGCGAGUGAGGUCU AACGACAA	3621
480	CCCAAUGU G CCAGAAGA	1227	UCUUCUGG GCCGAAGGCGAGUGAGGUCU ACAUUGGG	3622
583	AAAAUGUU G CCAUUUUG	1232	CAAAAUGG GCCGAAAGGCGAGUGAGGUCU AACAUUUU	3623
655	ACAAAAAU G CUGAUGUU	1238	AACAUCAG GCCGAAGGCGAGUGAGGUCU AUUUUUGU	3624
670	UUCUGGUU G CUGAGUCU	1240	AGACUCAG GCCGAAAGGCGAGUGAGGUCU AACCAGAA	3625
769	AUTUCAUU G CAGGAAAA	1247	UUUUCCUG GCCGAAAGGCGAGUGAGGUCU AAUGAAAU	3626
980	CAAAAGAU G CACAUUCA	1255	UGAAUGUG GCCGAAAGGCGAGUGAGGUCU AUCUUUUG	3627
1040	CCAAUCCC G CCAGACGG	1258	CCGUCUGG GCCGAAAGGCGAGUGAGGUCU GGGAUUGG	3628
1069	UAAUGUUU G CACAACAU	1259	AUGUUGUG GCCGAAAGGCGAGUGAGGUCU AAACAUUA	3629
1151	UCAAAAAU G CAAUCUCC	1262	GGAGAUUG GCCGAAAGGCGAGUGAGGUCU AUUUUGA	3630
1248	UUCUCAUU G CUGCAGAU	1268	AUCUGCAG GCCGAAAGGCGAGUGAGGUCU AAUGAGAA	3631
1251	UCAUUGCU G CAGAUUGG	1269	CCAAUCUG GCCGAAAGGCGAGUGAGGUCU AGCAAUGA	3632
1316	UGGUAACC G CCUCAAUC	1272	GAUUGAGG GCCGAAAGGCGAGUGAGGUCU GGUUACCA	3633
1353	CUUUUCCU G CUGCAGAC	1275	GUCUGCAG GCCGAAAGGCGAGUGAGGUCU AGGAAAAG	3634
1356	UUCCUGCU G CAGACAGU	1276	ACUGUCUG GCCGAAAGGCGAGUGAGGUCU AGCAGGAA	3635
1405	UUGACAGU G CUGCCCAU	1280	AUGGGCAG GCCGAAAGGCGAGUGAGGUCU ACUGUCAA	3636
1408	ACAGUGCU G CCCAUGUA	1281	UACAUGGG GCCGAAAGGCGAGUGAGGUCU AGCACUGU	3637
1465	ACACACUC G CCAAAAGA	1284	UCUUTUGG GCCGAAAGGCGAGUGAGGUCU GAGUGUGU	3638
1480	GAUUACCU G CAGCAGCU	1285	AGCUGCUG GCCGAAAGGCGAGUGAGGUCU AGGUAAUC	3639
1508	GUCCAUCU G CAGCGGGC	1286	GCCCGCUG GCCGAAAGGCGAGUGAGGUCU AGAUGGAC	3640
1575	GAAAUUGU G CUGCUGAC	1291	GUCAGCAG GCCGAAAGGCGAGUGAGGUCU ACAAUUUC	3641
1578	AUUGUGCU G CUGACGGA	1292	UCCGUCAG GCCGAAAGGCGAGUGAGGUCU AGCACAAU	3642
1613	AAGUGGGU G CUUUAACG	1294	CGUUAAAG GCCGAAAGGCGAGUGAGGUCU ACCCACUU	3643
1639	AAAGUGGU G CCAUCAUC	1296	GAUGAUGG GCCGAAAGGCGAGUGAGGUCU ACCACUUU	3644
1657	ACACAGUC G CUUUGGGG	1297	CCCCAAAG GCCGAAAGGCGAGUGAGGUCU GACUGUGU	3645
1672	GGCCCUCU G CAGCUCAA	1298	UUGAGCUG GCCGAAAGGCGAGUGAGGUCU AGAGGGCC	3646
1726	AGACAUAU G CUUCAGAU	1300	AUCUGAAG GCCGAAAGGCGAGUGAGGUCU AUAUGUCU	3647

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48	49	3650	651	3652	3653	3654	55	3656	3657	3658	3659	3660	3661	3662	3663	3664	3665	3666	3667	3668	3669	670	671	3672	3673	3674	75	3676	3677	3678	79	000
364	364	36	36	36	36	36	365	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	367	36	36	36	367	(
J AUCAAUGA	J GCUGAGAG	J GUUGUCCA	J AAUGCCUG	J AGACUGUA	J ACGGGACG	J AUUGGACG	J AGGGUAGC	J AUAAACUA	J GAAUAUUU	J ACCUGCUC	J AUCAGCAC	J ACUUUUAC	J GUUAACUC	J AUUUGGGA	J AGUAGUAU	J AAUGAAAA	J AAUGUUGG	J GGAGUCUG	J AGACGUUU	J AGUUCUCC	J AUTUUUAUU	J AUCCAUUU	J AAGAAAAU	J ACCUCUUC	J AUAACCUC	J AAUAUCUU	J AGGUCUUU	J ACGUUUCC	J ACACGUUU	J AGAUAUGA	J AUCUCCCU	
GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	CUUGCUUG GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU ACCUGCUC	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU AUUUGGGA	GCCGAAAGGCGAGUGAGGUCU AGUAGUAU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU AGACGUUU	GCCGAAAGGCGAGUGAGGUCU AGUUCUCC	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU ACCUCUUC	GCCGAAAGGCGAGUGAGGUCU AUAACCUC	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	
CCCAAAAG G	GGAUGGAG G	GGAGGCUG G	AACCUUAG G	CUUGCUUG G	AUUGGACG G	CAGGGUAG G	AUUGGAGG G	AAUAUUUG G	CUCCUUGG G	AGCAUCAG G	CUUAGUAG G	AGAGCCCG G	ucuegede e	UAUGGGAG G	GAUGAGAG G	CUGAAUAG G	UACUCGUG G	GUCUCUGG G	ACAAGGAG G	GACAGCUG G	UUGUUUAG G	AUAUUCCA G	CCCUUAAA G	AACCUCAA G	AUGCUUGA G	AAUGAUAA G	GUUUAUCA G	UAUAGACA G	AAUAUAGA G	UAUAUAUA G	UUGCUGUA G	
1302	1303	1307	1308	1309	1312	1313	1314	1317	1318	1322	1324	1328	1329	1337	1348	1351	1355	1357	1360	1361	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	
UCAUUGAU G CUUUUGGG	CUCUCAGC G CUCCAUCC	UGGACAAC G CAGCCUCC	CAGGCAUU G CUAAGGUU	UACAGUCU G CAAGCAAG	CGUCCCGU G CGUCCAAU	CGUCCAAU G CUACCCUG	GCUACCCU G CCUCCAAU	UAGUUUAU G CAAAUAUU	AAAUAUUC G CCAAGGAG	GAGCAGGU G CUGAUGCU	GUGCUGAU G CUACUAAG	GUAAAAGU G CGGGCUCU	GAGUUAAC G CAGCCAGA	UCCCAAAU G CUCCCAUA	AUACUACU G CUCUCAUC	UUUUCAUU G CUAUUCAG	CCAACAUU G CACGAGUA	CAGACUCC G CCAGAGAC	AAACGUCU G CUCCUUGU	GGAGAACU G CAGCUGUC	AAUAAAAU G CUAAACAA	AAAUGGAU G UGGAAUAU	AUUUUCUU G UUUAAGGG	GAAGAGGU G UUGAGGUU	GAGGUUAU G UCAAGCAU	AAGAUAUU G UUAUCAUU	AAAGACCU G UGAUAAAC	GGAAACGU G UGUCUAUA	AAACGUGU G UCUAUAUU	UCAUAUCU G UAUAUAUA	AGGGAGAU G UACAGCAA	
1762	1805	1923	2026	2055	2098	2107	2115	2185	2195	2296	2302	2376	2398	2584	2788	2878	2929	2964	2995	3078	3294	27	52	75	98	155	221	253	255	273	344	

3681	3683	3	3685	3686		3687																									
JCU ACAGAACU JCU AAUGCCUU	JCU AUUGGGU	- 1	JCU AGAUACAG	JCU AUUUUUGA		GCCGAAAGGCGAGUGAGGUCU AUAGUCAG	JCU AUAGUCAG JCU AUCAGCAU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC	JCU AUGAGCAU JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU JCU AAAUGCCU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU JCU AAAUGCU JCU AUUUGUACU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU JCU AUCUUACU JCU AUCUUACU JCU AUCUUACU JCU AUCUUACU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCU JCU AUCUUACU JCU AUUUGUAC JCU AUUUGUAC JCU AUUUGUAC JCU AUUUGUAC JCU AUUUGUAC	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU JCU AUUUGUAC JCU AUUUGUAC JCU ACUUCUUU JCU ACUUCUUU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU JCU AUUUGUAC UCU ACUUCUUU UCU ACUUCUUU UCU ACUUCUUU UCU AGCUGCCU UCU AAACUCCUU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCU JCU AAAUGCCU JCU AUCUUACU JCU AUUCUUU JCU ACUUCUUU JCU ACUUCUUU JCU AGCUGCCU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCCU JCU AAAUGCCU JCU ACUUCUUU JCU ACCUUUU JCU AGCUGCCU JCU AAACUCAC	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCC JCU AAAUGCU JCU AUCUUACU JCU AUCUUACU JCU AUCUUACU JCU AUCUUUU JCU AACUCCUUU JCU AAACUCAC JCU AAAAUCACAC JCU AAAAUCACAC JCU AGAAUUCA	JUCU AUAGUCAGO JUCU AUCAGCAU JUCU AGUUGCCC JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUUU JUCU AUUAUUGAGO JUCU AUUAUAGA	JUCU AUAGUCAGO JUCU AUCAGCAU JUCU AUCUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUCUUU JUCU AUUCUUUU JUCU AUUUUUU JUCU AUUUUUUU JUCU AUUUUUUU JUCU AUUUUUUUU JUCU AUUUUUUU	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCU JCU AAAUGCCU JCU AUCUUUU JCU AUCCUUUU JCU AUGUUGUG JCU AUGUUGUG JCU AUGUUGUG JCU AUGUUGUG JCU AUGUUGUG JCU AUGUUGUG JCU AUCCUUUU JCU AUGUUGUG	JCU AUAGUCAG JCU AUCAGCAU JCU AGUUGCCU JCU AAAUGCCU JCU AUCUUACU JCU AUCUUUU JCU AGCUGCCU JCU AGCUGCCU JCU AUCCUUU JCU AGCUGCCU JCU AUCCUUU JCU AAACUCAC JCU AUGUUCA JCU AUGUUCA JCU AUGUUCA JCU AUGUUCA JCU AUGUUCA JCU AUGUUCA JCU AUGGUCA JCU AGAAUUCU JCU AGAAUUCA JCU AUGGGCAG	JUCU AUAGUCAGO JUCU AUCAGCAU JUCU AGUUGCCC JUCU AAAUGCCU JUCU AUUUGUACU JUCU AUUUGUACU JUCU AUUCUUUU JUCU AUUCUUUU JUCU AUUAUAGA JUCU AUUAUAGA JUCU AUGUUGUG JUCU AGAAUUCU JUCU AGAAUUCU JUCU AGAAUUCU JUCU AGAAUUCU JUCU AGAAUUCU JUCU AGUUGUG JUCU AGAAUUCU JUCU AGUUGUG JUCU AGUUGAAU JUCU AGUAAAUG	JUCU AUAGUCAGO JUCU AUCAGCAU JUCU AGUUGCCC JUCU AAAUGCCU JUCU AUCUUGUAC JUCU AUCUUGUAC JUCU AUCCUUUU JUCU AUCCUUUU JUCU AUCCUUUU JUCU AAACUCAC JUCU AAACUCAC JUCU AAACUCAC JUCU AAACUCAC JUCU AAACUCUU JUCU AAUGUGUG JUCU AAUGUGUG JUCU AAUGUGUG JUCU AAUGUGUG JUCU AAUGUCUU JUCU AAUGUCUU JUCU AAUGUCAAUU JUCU ACACAAUU JUCU ACACAAUU JUCU ACACAAUU JUCU ACACAAUU JUCU AGUAAAAUG JUCU AGUAAAAUG JUCU AAUGUGAGG	JCU AUAGUCAG JCU AUCAGCAU JCU AUCUGCCU JCU AUCUUACU JCU AUCUUUU JCU AUCUUUU JCU AUCCUUUU JCU AUGUUGUG JCU AUGUGGCAG JCU AUGUGGCAG JCU AUGUGGCAG JCU AUGUGGCAG JCU AUGUGGCAG JCU AUGUGGCAG JCU AUGUGAG JCU AUGUGAGA JCU AUGUAAAUG JCU AUGUGAGAAU JCU AUGUAAAU JCU AUGUAAAU JCU AUGUAAAU JCU AUGUAAAU JCU AUGUAAAU JCU AUGUAAAU JCU AUGUAAAAU JCU AUG	JCU AUAGUCAG JCU AUCAGCAU JCU AUCAGCAU JCU AAAUGCCU JCU AUCUUUU JCU AUCCUUUU JCU AUGCUCAC JCU AUGGGCAG JCU AUGCGCAU	JUCU AUAGUCAGO JUCU AUCAGCAU JUCU AGUUGCCU JUCU AGUUGUACU JUCU AUCUUGUAC JUCU AUCUUGUAC JUCU AUCUUGUAC JUCU AUGUUGUAC JUCU AUGUUGUA JUCU AGAAUUCA JUCU AGUUGAGO JUCU AGUUCCAU	JUCU AUAGUCAGO JUCU AUCAGCAU JUCU AGUUGCCU JUCU AGUUGUACU JUCU AUCUUGUACU JUCU AGUUGUACU JUCU AGUUGUACU JUCU AGUUGUACU JUCU AGUUGUA JUCU AGAAUUCU JUCU AGAAUUCA JUCU AGAAUUCA JUCU AGAAUUCA JUCU AGAAUUCA JUCU AGAAUUCA JUCU AGUUCA JUCU AGUUCA JUCU AGUUCA JUCU AGUUCA JUCU AGUUCA JUCU AGUUCA JUCU AGUUCCA JUCU AGUUCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCCA JUCU AGUUCA JUCU AGUUCCA JUCU AGUUCCA JUCU 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3746	3747	3748	3749	3750	3751	3752	3753	3754	3755	3756	3757	3758	3759	3760	3761	3762	3763	3764	3765	3766	3767	3768	3769	3770	3771	3772	3773	3774	3775	3776	3777	3778
UUAUCGGA 3	GUUUCCAA 3	CAUUAUAU 3	GAAGGUGU 3	UGUACAUC 3	CCCAUUGC 3		cccuucua 3	UCAGGGCC 3	UGAAUGAG 3	CAUUGUUG	CUUCAUAG	GACAAUGC	CAUGUCCU	CUGGGUCA		UUUCCUGU 3	CUUUGUCU	CAGAACAU		CUGGAGGA		CCAUCUGC	CCANCACA			condoden	CUUACCUU	UCAUGGAC	CCACUCAU	UCCCCAUC	UCGUCAAA	THIGHAINIC
						GAGGUCU UCUI									GAGGUCU UUCA	GAGGUCU UUUK			GAGGUCU UCA(GAGGUCU CUG	GAGGUCU UCA(GAGGUCU UUU	GAGGUCU UAA				GAGGUCU CCA(GAGGUCU UCC		
GCCGAAAGGCGAGUGAGGUCU UCUUAAAU	GCCGAAAGGCGAGUGAGGUCU	CAGAGAUG GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU UUCAAACA	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU UCAGCAAC	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU UCAGUGUA	GCCGAAAGGCGAGUGAGGUCU	UCCUUUCA GCCGAAAGGCGAGUGAGGUCU	UCAGCUAA GCCGAAAGGCGAGUGAGGUCU UUUUUCC	GCCGAAAGGCGAGUGAGGUCU UAACUUUU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	UGAGCCCA GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	GCCGAAAGGCGAGUGAGGUCU	TICHTIACTIG GCCGAAAGGCGAGTICA												
GUUUCCAA GC	UAGACACA GC	UUUCUUUA GC	GCGGGUUA GC	CCCCAUUG GC	UUAAAUGG GC	ACACAGAA GC	ACUCAGGG GC	GUGAAUUA GC	UUGUUCAG GC	CUUCAUAG GC	CGACAAUG GC	GAUUGCAA GC	CUGGGUCA GC	CAGAGAUG GC	UCCUGUAG GC	UAAAAUCG GC	AUAGUCAG GC	CUCAGCAA GC	GGAGUAGA GC	CAUCAUUA GC	CCCAUCUG GC	CACAGUUG GC	UCCUUUCA GC	UCAGCUAA GC	AUAUUCAG GC	AUGCCUUA GC	GACAAAUG GC	UGAGCCCA GC	UAGAUGAG GC	GUCAAAUA GC	UVAUUGUA GC	TICITIACITG GO
1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475
UUGGAAAC	UGUGUCUA	UAAAGAAA	UAACCCGC	CAAUGGGG	CCAUUUAA	uncuenen	CCCUGAGU	UAAUUCAC	CUGAACAA	CUAUGAAG	CAUUGUCG	UUGCAAUC	UGACCCAG	CAUCUCUG	CUACAGGA	CGAUUUUA	CUGACUAU	UUGCUGAG	UCUACUCC	UAAUGAUG	CAGAUGGG	CAACUGUG	UGAAAGGA	UVAGCUGA	CUGAAUAU	UAAGGCAU	CAUUUGUC	UGGGCUCA	CUCAUCUA	UAUUUGAC	UACAAUAA	CAGITAAGA
UCCGAUAA G	UUGGAAAC G	AUAUAAUG G	ACACCUUC G	ZA G	GCAAUGGG G	AUUUAAGA G	UAGAAGGG G	GGCCCUGA G	CA G	CAACAAUG G	CUAUGAAG G	GCAUUGUC G	AGGACAUG G	UGACCCAG G	UGUUUGAA G	ACAGGAAA G	AGACAAAG G	AUGUUCUG G	GUUGCUGA G	UCCUCCAG G	UACACUGA G	GCAGAUGG G	AGAGAAGG G	GGAAAAAA G	AAAAGUUA G	ACCACAAG G	₽ G G	GUCCAUGA G	AUGAGUGG G	GAUGGGGA G	UUUGACGA G	GAAIIACAA
242	251	287	305	349	357	368	406	413	429	443	452	460	520	529	550	561	616	299	675	689	711	719	737	780	784	803	808	822	826	844	855	100

DISTORE DECI

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2	CUUCUUUA GCCGAAAGGCGAGUGAGGUCU UACAUUUG
ŨΙ	CCCUGACA GCCGAAAGGCGAGUGAGGUCU UUCUUUAC
ΰ١	AACAGCUG GCCGAAAGGCGAGUGAGGUCU
υı	UGUAACAG GCCGAAAGGCGAGUGAGGUCU
\circ	UCCUGUAA GCCGAAAGGCGAGUGAGGUCU
O	AGAACAAA GCCGAAAGGCGAGUGAGGUCU UCACAUCC
\circ	UAUAGAAG GCCGAAAGGCGAGUGAGGUCU
\mathbf{C}	GAAUUCAA GCCGAAAGGCGAGUGAGGUCU
	GUUUGGAG GCCGAAGGCGAGUGAGGUCU
	UGAUTUTUG GCCGAAAGGCGAGTGAGGTCU UUGUTUGG
	CCCAUGUG GCCGAAAGGCGAGUGAGGUCU UUCGGAGA
	ACGGAUCA GCCGAAGGCGAGUGAGGUCU
	CAGAAUCA GCCGAAAGGCGAGUGAGGUCU
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OGUCACUG GCCGAAAGGCGAGGGGCC CACOGOGO	- 1	1	GCCGAAAGGCGAGUGAGGUCU GUCCCUCC		SUCU UGCAGAUG				GCCGAAAGGCGAGUGAGGUCU UGCAGAUG GCCGAAAGGCGAGUGAGGUCU CCGCUGCA GCCGAAAGGCGAGUGAGGUCU UUAUAGUG GCCGAAAGGCGAGUGAGGUCU UUAUAGUG	SUCU UGCAGAUG SUCU CCGCUGCA SUCU CGAUCGAA SUCU UUAUAGUG SUCU CCACUUAU	SUCU UGCAGAUG SUCU CGAUCGAA SUCU UUAUAGUG SUCU CCACUUAU SUCU CUCGUUAA SUCU UUGUUUG	SUCU UGCAGAUG SUCU CGAUCGAA SUCU UUAUAGUG SUCU CCACUUAU SUCU CUCGUUAA SUCU CUCGUUAA SUCU CUCGUUAA	GAAGCCCG GCCGAAAGGCGAGUGAGGUCU UGCAGAUGGAUCGAAAGGCGAGUGAGGUCU UGCAGAUGCAAAGGCGAGUGAGGUCU CCGCUGCAAGUAAAAGGCGAGUGAGGUCU CGAUCGAAAGGCGAGUGAGGUCU UUAUAGUGUUAAAGCC GCCGAAAGGCGAGUGAGGUCU CCACUUAUUGUUUGA GCCGAAAGGCGAGUGAGGUCU CUCGUUAAUGGCCCCA GCCGAAAGGCGAGUGAGGUCU UUUGUUUGCUCGUUAAAGGCGAAAGGCGAGUGAGGUCU CUCGUUAAAGGCCAAAGGCGAGUGAGGUCU CUCGUUAAAGGCCAAAGGCGAGUGAGGUCU UUUGUUUGCCAAAAGGCGAGUGAGGUCU CACUUUGU	GCCGAAAGGCGAGUGAGGUCU UGCAGAUG GCCGAAAGGCGAGUGAGGUCU CCGCUGCA GCCGAAAGGCGAGUGAGGUCU CGAUCGAA GCCGAAAGGCGAGUGAGGUCU UUAUAGUG 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1445	1448	1486	1500	1511	1515	1525	1607	-	611	611	611 624 634	611 624 634 637	611 624 634 637 654	611 624 634 637 654 665	611 624 634 637 654 665 675	611 624 634 637 654 665 675	6111 624 634 637 665 675 692	611 624 634 637 654 665 675 7712 738	611 624 634 637 654 665 675 675 712 738	611 624 634 637 654 665 665 675 692 712 738	611 624 634 637 654 665 675 692 712 738 751	611 624 637 637 655 675 675 692 7712 7712 7712 7712 803	611 624 634 637 654 665 675 675 692 7712 7712 7712 7712 7712 7721 8803	611 624 634 637 654 665 675 675 7712 7712 7712 7712 8803 8803	624 624 637 637 665 665 675 675 7712 7712 7712 7712 8803 8803	624 624 637 637 654 665 675 675 7712 772 7738 873 815 823	611 624 634 637 6654 665 665 675 675 7712 7712 7712 883 8823 8823 8847	611 6624 6634 6637 6654 6655 675 675 675 7712 7711 7712 7711 7721 8803 8803 8815 8815 8815 8815 8815 8815 8815 881	1611 1624 1634 1637 1655 1665 1675 1675 1771 1771 1771 1803 1815 1823 1867 1867	1611 1624 1624 1637 1654 1665 1665 1675 1771 1771 1771 1803 1815 1823 1862 1862 1862 1863	1611 1624 1624 1637 1654 1655 1675 1692 1771 1771 1771 1803 1887 1867 1887 1880

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1543 CCACCUUG GCCGAAAGGCGAGUGAGGUCU UUCUGUCC 1544 CAAAGCCA GCCGAAAGGCGAGUGAGGUCU CUUGCUUC
-
CUACAAAG GCCGAAAGGCGAGUGAGGUCU
UUUGUCCA GCCGAAGGCGAGUGAGGUCU
GAGGUAGG GCCGAAGGCGAGUGAGGUCU CAUUUUGG
UAGCAAUG GCCGAAAGGCGAGUGAGGUCU
AGUGCCAA GCCGAAAGGCGAGUGAGGUCU
UCCAAGUG GCCGAAGGCGAGUGAGGUCU
CUUGCAGA GCCGAAAGGCCGAGUGAGGUCU
UGAGCUUG GCCGAAAGGCGAGUGAGGUCU UUGCAGAC
UUUGUGAG GCCGAAAGGCGAGUGAGGUCU UUGCUUGC
GCACGGGA GCCGAAGGCGAGUGAGGUCU
UGGACGCA GCCGAAGGCGAGUGAGGUCU
GCAUUGGA GCCGAAAGGCGAGUGAGGUCU
GGAAGUCA GCCGAAAGGCGAGUGAGGUCU UGUAAUUG
GGAAUUUG GCCGAAAGGCGAGUGAGGUCU
CCAGAGGG GCCGAAAGGCGAGUGAGGUCU
AUAAACUA GCCGAAAGGCGAGUGAGGUCU
UGCAUAAA GCCGAAAGGCGAGUGAGGUCU UACCAGAG
563 GACACUGG GCCGAAAGGCGAGUGAGGUCU
564 CUGUGACA GCCGAAAGGCGAGUGAGGUCU UGGCCCUG
565 AAUCAGGG GCCGAAAGGCGAGUGAGGUCU
566 UCCAUUCA GCCGAAAGGCGAGUGAGGUCU UGAUUCAA
CAAGGUAA GCCGAAAGGCGAGUGAGGUCU UGUUUUUC
AGCACCUG GCCGAAAGGCGAGUGAGGUCU
CAUCAGCA GCCGAAAGGCGAGUGAGGUCU
AGUAGACA GCCGAAAGGCGAGGGGCCU
GUGAAUA GCCGAAAGGCGAGUGAGGUCU
UGUAUCUA GCCGAAAGGCGAGUGAGGUCU
CUUUUACA GCCGAAAGGCGAGUGAGGUCU UGUAUCUA
574 AGCCCGCA GCCGAAAGGCGAGUGAGGUCU UUUUACAC

ISSEZING ISSEL

せいりつつしつ ワランりつりせせ	15/2 1	UCCCAGAG GCCGAAAGGCGAGOCAO CCGCACOO	38/8
GA G	1576	UGCGUUAA GCCGAAAGGCGAGUGAGGUCU UCCUCCCA	3879
UUAACGCA G CCAGACGG	1577	CCGUCUGG GCCGAAAGGCGAGUGAGGUCU UGCGUUAA	3880
GACGGAGA G UGAUACCC	1578	GGGUAUCA GCCGAAAGGCGAGUGAGGUCU UCUCCGUC	3881
AUACCCCA G CAGAGUGG	1579	CCACUCUG GCCGAAAGGCGAGUGAGGUCU UGGGGUAU	3882
CCAGCAGA G UGGAGCAC	1580	GUGCUCCA GCCGAAGGCGAGUGAGGUCU UCUGCUGG	3883
AGAGUGGA G CACUGUAC	1581	GUACAGUG GCCGAAAGGCGAGUGAGGUCU UCCACUCU	3884
CAUACCUG G CUGGAUUG	1582	CAAUCCAG GCCGAAAGGCGAGUGAGGUCU CAGGUAUG	3885
CAACACAA G CAAGUGUG	1583	CACACUUG GCCGAAAGGCGAGUGAGGUCU UUGUGUUG	3886
ACAAGCAA G UGUGUUUC	1584	GAPACACA GCCGAAAGGCGAGUGAGGUCU UUGCUUGU	3887
GUGUUUCA G CAGAACAU	1585	AUGUUCUG GCCGAAAGGCGAGUGAGGUCU UGAAACAC	3888
CUCGGGAG G CUCAUUUG	1586	CAAAUGAG GCCGAAAGGCGAGUGAGGUCU CUCCCGAG	3889
CAUUUGUG G CUUCUGAU	1587	AUCAGAAG GCCGAAAGGCGAGUGAGGUCU CACAAAUG	3890
CCCACCUG G CCAAAUCA	1588	UGAUUUGG GCCGAAAGGCGAGUGAGGUCU CAGGUGGG	3891
ACCUGAAG G CGGAAAUU	1589	AAUUUCCG GCCGAAAGGCGAGUGAGGUCU CUUCAGGU	3892
UCACGGGG G CAGUCUCA	1590	UGAGACUG GCCGAAAGGCGAGUGAGGUCU CCCCGUGA	3893
CGGGGGCA G UCUCAUUA	1591	UAAUGAGA GCCGAAAGGCGAGUGAGGUCU UGCCCCCG	3894
CUUGGACA G CUCCUGGG	1592	CCCAGGAG GCCGAAAGGCGAGUGAGGUCU UGUCCAAG	3895
AUGGAACA G CUCACAAG	1593	CUUGUGAG GCCGAAAGGCGAGUGAGGUCU UGUUCCAU	3896
GCUCACAA G UAUAUCAU	1594	AUGAUAUA GCCGAAAGGCGAGUGAGGUCU UUGUGAGC	3897
UCGAAUAA G UACAAGUA	1595	UACUUGUA GCCGAAAGGCGAGUGAGGUCU UUAUUCGA	3898
AAGUACAA G UAUUCUUG	1596	CAAGAAUA GCCGAAAGGCGAGUGAGGUCU UUGUACUU	3899
AGAGACAA G UUCAAUGA	1597	UCAUUGAA GCCGAAGGCGAGUGAGGUCU UUGUCUCU	3900
CUCUUCAA G UGAAUACU	1598	AGUAUUCA GCCGAAGGCGAGUGAGGUCU UUGAAGAG	3901
CAAAGGAA G CCAACUCU	1599	AGAGUUGG GCCGAAAGGCGAGUGAGGUCU UUCCUUUG	3902
CUGAGGAA G UCUUUUUG	1600	CAAAAAGA GCCGAAAGGCGAGUGAGGUCU UUCCUCAG	3903
UGAAAAUG G CACAGAUC	1601	GAUCUGUG GCCGAAGGCGAGUGAGGUCU CAUUUUCA	3904
CUAUUCAG G CUGUUGAU	1602	AUCAACAG GCCGAAAGGCGAGUGAGGUCU CUGAAUAG	3905
UUGAUAAG G UCGAUCUG	1603	CAGAUCGA GCCGAAAGGCGAGUGAGGUCU CUUAUCAA	3906
UUGCACGA G UAUCUUUG	1604	CAAAGAUA GCCGAAAGGCGAGUGAGGUCU UCGUGCAA	3907
GACACCUA G UCCUGAUG	1605	CAUCAGGA GCCGAAAGGCGAGUGAGGUCU UAGGUGUC	3908
GAUGAAAC G UCUGCUCC	1606	GGAGCAGA GCCGAAAGGCGAGUGAGGUCU GUUUCAUC	3909
בווומטטמט ל מטממטוומוו	1607	ALIAPITIPIT TIOTIPA A DIPARPITA A DIPARTITA A DI LIPETTA	3910

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ווייייייייייייייייייייייייייייייייייייי	CAUUCCUG G CAUUCACA	1608	UGUGAAUG GCCGAAAGGCGAGUGAGGUCU CAGGAAUG	3911
3063	AUGUGGAA G UGGAUAGG	1609	CCUAUCCA GCCGAAAGGCGAGUGAGGUCU UUCCACAU	3912
3081	GAACUGCA G CUGUCAAU	1610	AUUGACAG GCCGAAAGGCGAGUGAGGUCU UGCAGUUC	3913
3091	UGUCAAUA G CCUAGGGC	1611	GCCCUAGG GCCGAAAGGCGAGUGAGGUCU UAUUGACA	3914
3098	AGCCUAGG G CUGAAUUU	1612	AAAUUCAG GCCGAAAGGCGAGUGAGGUCU CCUAGGCU	3915
3189	UGUAGGGG G CGAUAUAC	1613	GUAUAUCG GCCGAAAGGCGAGUGAGGUCU CCCCUACA	3916
3242	UGUAGGGG G CGAUAUAC	1613	GUAUAUCG GCCGAAAGGCGAGUGAGGUCU CCCCUACA	3916
3210	UGUAUAUA G UACAUUUA	1614	UAAAUGUA GCCGAAAGGCGAGUGAGGUCU UAUAUACA	3917
3279	UGUAGGGG G CGAUAAAA	1615	UUUUAUCG GCCGAAAGGCGAGUGAGGUCU CCCCUACA	3918

Input Sequence = NM_001285. Cut Site = G/Y
Arm Length = 8. Core Sequence = GCcgaaagGCGaGuCaaGGuCu
NM_001285 (Homo sapiens chloride channel, calcium activated, 1 (CLCA1) mRNA, 3311 bp)

Table VII: Human CLCA1 DNAzyme and Target Sequence

Pos	Substrate	Seq ID	DNAzyme	Rz
		No	•	Seq ID
				No
17	CUUUUGGU A CAAAUGGA	4	TCCATTTG GGCTAGCTACAACGA ACCAAAAG	3919
34	UGUGGAAU A UAAUUGAA	5	TTCAATTA GGCTAGCTACAACGA ATTCCACA	3920
44	AAUUGAAU A UUUUCUUG	8	CAAGAAAA GGCTAGCTACAACGA ATTCAATT	3921
84	UUGAGGUU A UGUCAAGC	19	GCTTGACA GGCTAGCTACAACGA AACCTCAA	3922
122	AUGGAAAU A UUUACAAG	22	CTTGTAAA GGCTAGCTACAACGA ATTTCCAT	3923
126	AAAUAUUU A CAAGUACG	25	CGTACTTG GGCTAGCTACAACGA AAATATTT	3924
132	UUACAAGU A CGCAAUUU	26	AAATTGCG GGCTAGCTACAACGA ACTTGTAA	3925
152	ACUAAGAU A UUGUUAUC	30	GATAACAA GGCTAGCTACAACGA ATCTTAGT	3926
158	AUAUUGUU A UCAUUCUC	33	GAGAATGA GGCTAGCTACAACGA AACAATAT	3927
169	AUUCUCCU A UUGAAGAC	38	GTCTTCAA GGCTAGCTACAACGA AGGAGAAT	3928
259	GUGUGUCU A UAUUUUCA	52	TGAAAATA GGCTAGCTACAACGA AGACACAC	3929
261	GUGUCUAU A UUUUCAUA	53	TATGAAAA GGCTAGCTACAACGA ATAGACAC	3930
269	AUUUUCAU A UCUGUAUA	58	TATACAGA GGCTAGCTACAACGA ATGAAAAT	3931
275	AUAUCUGU A UAUAUAUA	60	TATATATA GGCTAGCTACAACGA ACAGATAT	3932
277	AUCUGUAU A UAUAUAAU	61	ATTATATA GGCTAGCTACAACGA ATACAGAT	3933
279	CUGUAUAU A UAUAAUGG	62	CCATTATA GGCTAGCTACAACGA ATATACAG	3934
281	GUAUAUAU A UAAUGGUA	63	TACCATTA GGCTAGCTACAACGA ATATATAC	3935
346	GGAGAUGU A CAGCAAUG	74	CATTGCTG GGCTAGCTACAACGA ACATCTCC	3936
446	CAAUGGCU A UGAAGGCA	97	TGCCTTCA GGCTAGCTACAACGA AGCCATTG	3937
539	AUCUCUGU A UCUGUUUG	108	CAAACAGA GGCTAGCTACAACGA ACAGAGAT	3938
553	UUGAAGCU A CAGGAAAG	112	CTTTCCTG GGCTAGCTACAACGA AGCTTCAA	3939
569	GCGAUUUU A UUUCAAAA	116	TTTTGAAA GGCTAGCTACAACGA AAAATCGC	3940
623	GGCUGACU A UGUGAGAC	126	GTCTCACA GGCTAGCTACAACGA AGTCAGCC	3941
647	UGAGACCU A CAAAAAUG	128	CATTTTG GGCTAGCTACAACGA AGGTCTCA	3942
679	CUGAGUCU A CUCCUCCA	133	TGGAGGAG GGCTAGCTACAACGA AGACTCAG	3943
704	UGAACCCU A CACUGAGC	137	GCTCAGTG GGCTAGCTACAACGA AGGGTTCA	3944
791	AGCUGAAU A UGGACCAC	147	GTGGTCCA GGCTAGCTACAACGA ATTCAGCT	3945
834	GCUCAUCU A CGAUGGGG	154	CCCCATCG GGCTAGCTACAACGA AGATGAGC	3946
846	UGGGAGU A UUUGACGA	155	TCGTCAAA GGCTAGCTACAACGA ACTCCCCA	3947
857	UGACGAGU A CAAUAAUG	158	CATTATTG GGCTAGCTACAACGA ACTCGTCA	3948
878	GAAAUUCU A CUUAUCCA	162	TGGATAAG GGCTAGCTACAACGA AGAATTTC	3949
882	UUCUACUU A UCCAAUGG	164	CCATTGGA GGCTAGCTACAACGA AAGTAGAA	3950
897	GGAAGAAU A CAAGCAGU	166	ACTGCTTG GGCTAGCTACAACGA ATTCTTCC	3951
922	CAGCAGGU A UUACUGGU	170	ACCAGTAA GGCTAGCTACAACGA ACCTGCTG	3952
925	CAGGUAUU A CUGGUACA	172	TGTACCAG GGCTAGCTACAACGA AATACCTG	3953
931	UUACUGGU A CAAAUGUA	173	TACATTTG GGCTAGCTACAACGA ACCAGTAA	3954
968	CAGCUGUU A CACCAAAA	178	TTTTGGTG GGCTAGCTACAACGA AACAGCTG	3955
997	AUAAAGUU A CAGGACUC	183	GAGTCCTG GGCTAGCTACAACGA AACTTTAT	3956
1007	AGGACUCU A UGAAAAAG	185	CTTTTCA GGCTAGCTACAACGA AGAGTCCT	3957
1060	AGGCUUCU A UAAUGUUU	194	AAACATTA GGCTAGCTACAACGA AGAAGCCT	3958
1087	UUGAUUCU A UAGUUGAA	201	TTCAACTA GGCTAGCTACAACGA AGAATCAA	3959
1102	AAUUCUGU A CAGAACAA	206	TTGTTCTG GGCTAGCTACAACGA ACAGAATT	3960
1213	CCACUCCU A UGACAACA	218	TGTTGTCA GGCTAGCTACAACGA AGGAGTGG	3961
1416	GCCAUGU A CAAAGUGA	245	TCACTTTG GGCTAGCTACAACGA ACATGGGC	3962
1431	GAACUCAU A CAGAUAAA	247	TTTATCTG GGCTAGCTACAACGA ATGAGTTC	3963
1476	AAAAGAUU A CCUGCAGC	251	GCTGCAGG GGCTAGCTACAACGA AATCTTTT	3964
1531	CGGCAUUU A CUGUGAUU	261	AATCACAG GGCTAGCTACAACGA AAATGCCG	3965
1550	GAAGAAAU A UCCAACUG	264	CAGTTGGA GGCTAGCTACAACGA ATTTCTTC	3966
1603	ACAACACU A UAAGUGGG	268	CCCACTTA GGCTAGCTACAACGA AGTGTTGT	3967
1716	GGAGGUUU A CAGACAUA	285	TATGTCTG GGCTAGCTACAACGA AAACCTCC	3968
1724	ACAGACAU A UGCUUCAG	286	CTGAAGCA GGCTAGCTACAACGA ATGTCTGT	3969
1,47	LIGITOTIC A COCCOCAC	1 200	TITLIBET CCCTTCCTACCA AIGICIGI	1 2 2 0 2

1909	UGUUUCUU A UCACCUGG	318	CCAGGTGA GGCTAGCTACAACGA AAGAAACA	3970
2006	AAUGGCCU A CCUCCAAA	329	TTTGGAGG GGCTAGCTACAACGA AGGCCATT	3971
2048	UUGGAAAU A CAGUCUGC	336	GCAGACTG GGCTAGCTACAACGA ATTTCCAA	3972
2110	CCAAUGCU A CCCUGCCU	343	AGGCAGGG GGCTAGCTACAACGA AGCATTGG	3973
2125	CUCCAAUU A CAGUGACU	346	AGTCACTG GGCTAGCTACAACGA AATTGGAG	3974
2183	GGUAGUUU A UGCAAAUA	355	TATTTGCA GGCTAGCTACAACGA AAACTACC	3975
2191	AUGCAAAU A UUCGCCAA	356	TTGGCGAA GGCTAGCTACAACGA ATTTGCAT	3976
2266	AAACAGUU A CCUUGGAA	367	TTCCAAGG GGCTAGCTACAACGA AACTGTTT	3977
2277	UUGGAACU A CUGGAUAA	369	TTATCCAG GGCTAGCTACAACGA AGTTCCAA	3978
2305	CUGAUGCU A CUAAGGAU	371	ATCCTTAG GGCTAGCTACAACGA AGCATCAG	3979
2324	CGGUGUCU A CUCAAGGU	374	ACCTTGAG GGCTAGCTACAACGA AGACACCG	3980
2333	CUCAAGGU A UUUCACAA	376	TTGTGAAA GGCTAGCTACAACGA ACCTTGAG	3981
2345	CACAACUU A UGACACGA	381	TCGTGTCA GGCTAGCTACAACGA AAGTTGTG	3982
2363	UGGUAGAU A CAGUGUAA	383	TTACACTG GGCTAGCTACAACGA ATCTACCA	3983
2418	AGAGUGAU A CCCCAGCA	388	TGCTGGGG GGCTAGCTACAACGA ATCACTCT	3984
2441	AGCACUGU A CAUACCUG	389	CAGGTATG GGCTAGCTACAACGA ACAGTGCT	3985
2445	CUGUACAU A CCUGGCUG	390	CAGCCAGG GGCTAGCTACAACGA ATGTACAG	3986
2472	GAUGAAAU A CAAUGGAA	392	TTCCATTG GGCTAGCTACAACGA ATTTCATC	3987
2592	GCUCCCAU A CCUGAUCU	411	AGATCAGG GGCTAGCTACAACGA ATGGGAGC	3988
2690	GGAUGAUU A UGACCAUG	427	CATGGTCA GGCTAGCTACAACGA AATCATCC	3989
2714	UCACAAGU A UAUCAUUC	429	GAATGATA GGCTAGCTACAACGA ACTTGTGA	3990
2716	ACAAGUAU A UCAUUCGA	430	TCGAATGA GGCTAGCTACAACGA ATACTTGT	3991
2731	GAAUAAGU A CAAGUAUU	435	AATACTTG GGCTAGCTACAACGA ACTTATTC	3992
2737	GUACAAGU A UUCUUGAU	436	ATCAAGAA GGCTAGCTACAACGA ACTTGTAC	3993
2782	AAGUGAAU A CUACUGCU	448	AGCAGTAG GGCTAGCTACAACGA ATTCACTT	3994
2785	UGAAUACU A CUGCUCUC	449	GAGAGCAG GGCTAGCTACAACGA AGTATTCA	3995
2848	AAAACAUU A CUUUUGAA	463	TTCAAAAG GGCTAGCTACAACGA AATGTTTT	3996
2881	UCAUUGCU A UUCAGGCU	473	AGCCTGAA GGCTAGCTACAACGA AGCAATGA	3997
2919	UCAGAAAU A UCCAACAU	481	ATGTTGGA GGCTAGCTACAACGA ATTTCTGA	3998
2937	GCACGAGU A UCUUUGUU	484	AACAAAGA GGCTAGCTACAACGA ACTCGTGC	3999
2947	CUUUGUUU A UUCCUCCA	490	TGGAGGAA GGCTAGCTACAACGA AAACAAAG	4000
3010	GUCCUAAU A UUCAUAUC	502	GATATGAA GGCTAGCTACAACGA ATTAGGAC	4001
3016	AUAUUCAU A UCAACAGC	505	GCTGTTGA GGCTAGCTACAACGA ATGAATAT	4002
3055	UAAAAUU A UGUGGAAG	516	CTTCCACA GGCTAGCTACAACGA AATTTTTA	4003
3149	UUUUGAUU A UAAAAUUU	540	AAATTTTA GGCTAGCTACAACGA AATCAAAA	4004
3168	UAAAAUGU A UUUUAGAC	547	GTCTAAAA GGCTAGCTACAACGA ACATTTTA	4005
3194	GGGGCGAU A UACUAAAU	555	ATTTAGTA GGCTAGCTACAACGA ATCGCCCC	4006
3247	GGGGCGAU A UACUAAAU	555	ATTTAGTA GGCTAGCTACAACGA ATCGCCCC	4006
3196	GGCGAUAU A CUAAAUGU	556	ACATTTAG GGCTAGCTACAACGA ATATCGCC	4007
3249	GGCGAUAU A CUAAAUGU	556	ACATTTAG GGCTAGCTACAACGA ATATCGCC	4007
3205	CUAAAUGU A UAUAGUAC	558	GTACTATA GGCTAGCTACAACGA ACATTTAG	4008
3207	AAAUGUAU A UAGUACAU	559	ATGTACTA GGCTAGCTACAACGA ATACATTT	4009
3212	UAUAUAGU A CAUUUAUA	561	TATAAATG GGCTAGCTACAACGA ACTATATA	4010
3218	GUACAUUU A UACUAAAU	564	ATTTAGTA GGCTAGCTACAACGA AAATGTAC	4011
3220	ACAUUUAU A CUAAAUGU	565	ACATTTAG GGCTAGCTACAACGA ATAAATGT	4012
3229	CUAAAUGU A UUCCUGUA	567	TACAGGAA GGCTAGCTACAACGA ACATTTAG	4013
3258	CUAAAUGU A UUUUAGAC	572	GTCTAAAA GGCTAGCTACAACGA ACATTTAG	4014
65	AGGGGAGC A UGAAGAGG	579	CCTCTTCA GGCTAGCTACAACGA GCTCCCCT	4015
93	UGUCAAGC A UCUGGCAC	581	GTGCCAGA GGCTAGCTACAACGA GCTTGACA	4016
100	CAUCUGGC A CAGCUGAA	583	TTCAGCTG GGCTAGCTACAACGA GCCAGATG	4017
161	UUGUUAUC A UUCUCCUA	590	TAGGAGAA GGCTAGCTACAACGA GATAACAA	4018
195	AGUAAAAC A CAUCAGGU	596	ACCTGATG GGCTAGCTACAACGA GTTTTACT	4019
197	UAAAACAC A UCAGGUCA	597	TGACCTGA GGCTAGCTACAACGA GTGTTTTA	4020
231	GAUAAACC A CUUCCGAU	603	ATCGGAAG GGCTAGCTACAACGA GGTTTATC	4021
267	AUAUUUUC A UAUCUGUA	607	TACAGATA GGCTAGCTACAACGA GAAAATAT	4022
299	AGAAAGAC A CCUUCGUA	609	TACGAAGG GGCTAGCTACAACGA GTCTTTCT	4023

314	UAACCCGC A UUUUCCAA	614	TTGGAAAA GGCTAGCTACAACGA GCGGGTTA	4024
334	GAGGAAUC A CAGGGAGA	617	TCTCCCTG GGCTAGCTACAACGA GATTCCTC	4025
360	AUGGGGCC A UUUAAGAG	622	CTCTTAAA GGCTAGCTACAACGA GGCCCCAT	4026
379	CUGUGUUC A UCUUGAUU	624	AATCAAGA GGCTAGCTACAACGA GAACACAG	4027
392	GAUUCUUC A CCUUCUAG	627	CTAGAAGG GGCTAGCTACAACGA GAAGAATC	4028
420	AGUAAUUC A CUCAUUCA	634	TGAATGAG GGCTAGCTACAACGA GAATTACT	4029
424	AUUCACUC A UUCAGCUG	636	CAGCTGAA GGCTAGCTACAACGA GAGTGAAT	4030
454	AUGAAGGC A UUGUCGUU	642	AACGACAA GGCTAGCTACAACGA GCCTTCAT	4031
495	GAUGAAAC A CUCAUUCA	650	TGAATGAG GGCTAGCTACAACGA GTTTCATC	4032
499	AAACACUC A UUCAACAA	652	TTGTTGAA GGCTAGCTACAACGA GAGTGTTT	4033
517	UAAAGGAC A UGGUGACC	655	GGTCACCA GGCTAGCTACAACGA GTCCTTTA	4034
531	ACCCAGGC A UCUCUGUA	659	TACAGAGA GGCTAGCTACAACGA GCCTGGGT	4035
586	AUGUUGCC A UUUUGAUU	667	AATCAAAA GGCTAGCTACAACGA GGCAACAT	4036
603	CCUGAAAC A UGGAAGAC	670	GTCTTCCA GGCTAGCTACAACGA GTTTCAGG	4037
706	AACCCUAC A CUGAGCAG	692	CTGCTCAG GGCTAGCTACAACGA GTAGGGTT	4038
749	AAGGAUCC A CCUCACUC	698	GAGTGAGG GGCTAGCTACAACGA GGATCCTT	4039
754	UCCACCUC A CUCCUGAU	701	ATCAGGAG GGCTAGCTACAACGA GAGGTGGA	4040
766	CUGAUUUC A UUGCAGGA	705	TCCTGCAA GGCTAGCTACAACGA GAAATCAG	4041
798	UAUGGACC A CAAGGUAA	709	TTACCTTG GGCTAGCTACAACGA GGTCCATA	4042
810	GGUAAGGC A UUUGUCCA	711	TGGACAAA GGCTAGCTACAACGA GCCTTACC	4043
818	AUUUGUCC A UGAGUGGG	713	CCCACTCA GGCTAGCTACAACGA GGACAAAT	4044
830	GUGGGCUC A UCUACGAU	715	ATCGTAGA GGCTAGCTACAACGA GAGCCCAC	4045
970	GCUGUUAC A CCAAAAGA	731	TCTTTTGG GGCTAGCTACAACGA GTAACAGC	4046
982	AAAGAUGC A CAUUCAAU	734	ATTGAATG GGCTAGCTACAACGA GCATCTTT	4047
984	AGAUGCAC A UUCAAUAA	735	TTATTGAA GGCTAGCTACAACGA GTGCATCT	4048
1071	AUGUUUGC A CAACAUGU	749	ACATGTTG GGCTAGCTACAACGA GCAAACAT	4049
1076	UGCACAAC A UGUUGAUU	751	AATCAACA GGCTAGCTACAACGA GTTGTGCA	4050
1115	ACAAAACC A CAACAAAG	757	CTTTGTTG GGCTAGCTACAACGA GGTTTTGT	4051
1165	UCCGAAGC A CAUGGGAA	769	TTCCCATG GGCTAGCTACAACGA GCTTCGGA	4052
1167	CGAAGCAC A UGGGAAGU	770	ACTTCCCA GGCTAGCTACAACGA GTGCTTCG	4053
1207	AGAAAACC A CUCCUAUG	775	CATAGGAG GGCTAGCTACAACGA GGTTTTCT	4054
1221	AUGACAAC A CAGCCACC	780	GGTGGCTG GGCTAGCTACAACGA GTTGTCAT	4055
1227	ACACAGCC A CCAAAUCC	783	GGATTTGG GGCTAGCTACAACGA GGCTGTGT	4056
1237	CAAAUCCC A CCUUCUCA	788	TGAGAAGG GGCTAGCTACAACGA GGGATTTG	4057
1245	ACCUUCUC A UUGCUGCA	792	TGCAGCAA GGCTAGCTACAACGA GAGAAGGT	4058
1300	CUGGAAGC A UGGCGACU	800	AGTCGCCA GGCTAGCTACAACGA GCTTCCAG	4059
1395	AUGGUGAC A UUUGACAG	820	CTGTCAAA GGCTAGCTACAACGA GTCACCAT	4060
1412	UGCUGCCC A UGUACAAA	825	TTTGTACA GGCTAGCTACAACGA GGGCAGCA	4061
1429	GUGAACUC A UACAGAUA	828	TATCTGTA GGCTAGCTACAACGA GAGTTCAC	4062
1459	ACAGGGAC A CACUCGCC	833	GGCGAGTG GGCTAGCTACAACGA GTCCCTGT	4063
1461	AGGGACAC A CUCGCCAA	834	TTGGCGAG GGCTAGCTACAACGA GTGTCCCT	4064
1504	GGACGUCC A UCUGCAGC	845	GCTGCAGA GGCTAGCTACAACGA GGACGTCC	4065
1527	CGAUCGGC A UUUACUGU	849	ACAGTAAA GGCTAGCTACAACGA GCCGATCG	4066
1600	AAGACAAC A CUAUAAGU	858	ACTTATAG GGCTAGCTACAACGA GTTGTCTT	4067
1642	GUGGUGCC A UCAUCCAC	864	GTGGATGA GGCTAGCTACAACGA GGCACCAC	4068
1645	GUGCCAUC A UCCACACA	865	TGTGTGGA GGCTAGCTACAACGA GATGGCAC	4069
1649	CAUCAUCC A CACAGUCG	867	CGACTGTG GGCTAGCTACAACGA GGATGATG	4070
1651	UCAUCCAC A CAGUCGCU	868	AGCGACTG GGCTAGCTACAACGA GTGGATGA	4071
1722	UUACAGAC A UAUGCUUC	884	GAAGCATA GGCTAGCTACAACGA GTCTGTAA	4072
1756	AUGGCCUC A UUGAUGCU	892	AGCATCAA GGCTAGCTACAACGA GAGGCCAT	4073
1779	GCCCUUUC A UCAGGAAA	897	TTTCCTGA GGCTAGCTACAACGA GAAAGGGC	4074
1810	AGCGCUCC A UCCAGCUU	905	AAGCTGGA GGCTAGCTACAACGA GGAGCGCT	4075
1864	UGAAUGGC A CAGUGAUC	917	GATCACTG GGCTAGCTACAACGA GCCATTCA	4076
1882	UGGACAGC A CCGUGGGA	920	TCCCACGG GGCTAGCTACAACGA GCTGTCCA	4077
1897	GAAAGGAC A CUUUGUUU	922	AAACAAAG GGCTAGCTACAACGA GTCCTTTC	4078
1912	UUCUUAUC A CCUGGACA	925	TGTCCAGG GGCTAGCTACAACGA GATAAGAA	4079

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2023	UCCCAGGC A UUGCUAAG	959	CTTAGCAA GGCTAGCTACAACGA GCCTGGGA	4081
2038	AGGUUGGC A CUUGGAAA	961	TTTCCAAG GGCTAGCTACAACGA GCCAACCT	4082
2067	GCAAGCUC A CAAACCUU	968	AAGGTTTG GGCTAGCTACAACGA GAGCTTGC	4083
2089	UGACUGUC A CGUCCCGU	976	ACGGGACG GGCTAGCTACAACGA GACAGTCA	4084
2152	ACAAGGAC A CCAGCAAA	994	TTTGCTGG GGCTAGCTACAACGA GTCCTTGT	4085
2230	CCAGUGUC A CAGCCCUG	1019	CAGGGCTG GGCTAGCTACAACGA GACACTGG	4086
2338	GGUAUUUC A CAACUUAU	1037	ATAAGTTG GGCTAGCTACAACGA GAAATACC	4087
2350	CUUAUGAC A CGAAUGGU	1040	ACCATTCG GGCTAGCTACAACGA GTCATAAG	4088
2436	AGUGGAGC A CUGUACAU	1052	ATGTACAG GGCTAGCTACAACGA GCTCCACT	4089
2443	CACUGUAC A UACCUGGC	1054	GCCAGGTA GGCTAGCTACAACGA GTACAGTG	4090
2484	UGGAAUCC A CCAAGACC	1060	GGTCTTGG GGCTAGCTACAACGA GGATTCCA	4091
2519	UGUUCAAC A CAAGCAAG	1066	CTTGCTTG GGCTAGCTACAACGA GTTGAACA	4092
2544	AGCAGAAC A UCCUCGGG	1071	CCCGAGGA GGCTAGCTACAACGA GTTCTGCT	4093
2559	GGAGGCUC A UUUGUGGC	1075	GCCACAAA GGCTAGCTACAACGA GAGCCTCC	4094
2590	AUGCUCCC A UACCUGAU	1084	ATCAGGTA GGCTAGCTACAACGA GGGAGCAT	4095
2607	CUCUUCCC A CCUGGCCA	1091	TGGCCAGG GGCTAGCTACAACGA GGGAAGAG	4096
2620	GCCAAAUC A CCGACCUG	1096	CAGGTCGG GGCTAGCTACAACGA GATTTGGC	4097
2642	GGAAAUUC A CGGGGGCA	1100	TGCCCCCG GGCTAGCTACAACGA GAATTTCC	4098
2656	GCAGUCUC A UUAAUCUG	1103	CAGATTAA GGCTAGCTACAACGA GAGACTGC	4099
2696	UUAUGACC A UGGAACAG	1111	CTGTTCCA GGCTAGCTACAACGA GGTCATAA	4100
2708	AACAGCUC A CAAGUAUA	1114	TATACTTG GGCTAGCTACAACGA GAGCTGTT	4101
2719	AGUAUAUC A UUCGAAUA	1116	TATTCGAA GGCTAGCTACAACGA GATATACT	4102
2794	CUGCUCUC A UCCCAAAG	1130	CTTTGGGA GGCTAGCTACAACGA GAGAGCAG	4103
2845	CAGAAAAC A UUACUUUU	1141	AAAAGTAA GGCTAGCTACAACGA GTTTTCTG	4104
2863	AAAAUGGC A CAGAUCUU	1143	AAGATCTG GGCTAGCTACAACGA GCCATTTT	4105
2875	AUCUUUUC A UUGCUAUU	1146	AATAGCAA GGCTAGCTACAACGA GAAAAGAT	4106
2926	UAUCCAAC A UUGCACGA	1154	TCGTGCAA GGCTAGCTACAACGA GTTGGATA	4107
2931	AACAUUGC A CGAGUAUC	1155	GATACTCG GGCTAGCTACAACGA GCAATGTT	4108
2955	AUUCCUCC A CAGACUCC	1160	GGAGTCTG GGCTAGCTACAACGA GGAGGAAT	4109
2973	CCAGAGAC A CCUAGUCC	1166	GGACTAGG GGCTAGCTACAACGA GTCTCTGG	4110
3014	UAAUAUUC A UAUCAACA	1177	TGTTGATA GGCTAGCTACAACGA GAATATTA	4111
3025	UCAACAGC A CCAUUCCU	1180	AGGAATGG GGCTAGCTACAACGA GCTGTTGA	4112
3028	ACAGCACC A UUCCUGGC	1182	GCCAGGAA GGCTAGCTACAACGA GGTGCTGT	4113
3037	UUCCUGGC A UUCACAUU	1185	AATGTGAA GGCTAGCTACAACGA GCCAGGAA	4114
3041	UGGCAUUC A CAUUUUAA	1186	TTAAAATG GGCTAGCTACAACGA GAATGCCA	4115
3043	GCAUUCAC A UUUUAAAA	1187	TTTTAAAA GGCTAGCTACAACGA GTGAATGC	4116
3130	AAUAAAUC A UUCAUCCU	1196	AGGATGAA GGCTAGCTACAACGA GATTTATT	4117
3134	AAUCAUUC A UCCUUUUU	 	AAAAAGGA GGCTAGCTACAACGA GAATGATT	4118
3214	UAUAGUAC A UUUAUACU	1205	AGTATAAA GGCTAGCTACAACGA GTACTATA	4119
134	ACAAGUAC G CAAUUUGA	1215	TCAAATTG GGCTAGCTACAACGA GTACTTGT	4120
312	CGUAACCC G CAUUUUCC	1220	GGAAAATG GGCTAGCTACAACGA GGGTTACG	4121
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480	CCCAAUGU G CCAGAAGA	1227	TCTTCTGG GGCTAGCTACAACGA ACATTGGG	4123
583	AAAAUGUU G CCAUUUUG	1232	CAAAATGG GGCTAGCTACAACGA AACATTTT	4124
655	ACAAAAU G CUGAUGUU	1238	AACATCAG GGCTAGCTACAACGA ATTTTTGT	4125
670	UUCUGGUU G CUGAGUCU	1240	AGACTCAG GGCTAGCTAGAACGA AACCAGAA	4126
769	AUUUCAUU G CAGGAAAA	1247	TTTTCCTG GGCTAGCTACAACGA AATGAAAT	4127
980	CAAAAGAU G CACAUUCA	1255	TGAATGTG GGCTAGCTACAACGA ATCTTTTG	4128
1040	CCAAUCCC G CCAGACGG	1258	CCGTCTGG GGCTAGCTACAACGA GGGATTGG	4129
1069	UAAUGUUU G CACAACAU	1259	ATGTTGTG GGCTAGCTAGAACGA AAACATTA	4130
1151	UCAAAAAU G CAAUCUCC	1262	GGAGATTG GGCTAGCTACAACGA ATTTTTGA	4131
1248	UUCUCAUU G CUGCAGAU UCAUUGCU G CAGAUUGG	1268	ATCTGCAG GGCTAGCTACAACGA AATGAGAA	4132
1316	UGGUAACC G CCUCAAUC	1269	CCAATCTG GGCTAGCTACAACGA AGCAATGA GATTGAGG GGCTAGCTACAACGA GGTTACCA	4133
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1353	CUUUUCCU G CUGCAGAC	1275	GTCTGCAG GGCTAGCTACAACGA AGGAAAAG	4135

1356	UUCCUGCU G CAGACAGU	1276	ACTGTCTG GGCTAGCTACAACGA AGCAGGAA	4136
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1408	ACAGUGCU G CCCAUGUA	1281	TACATGGG GGCTAGCTACAACGA AGCACTGT	4138
1465	ACACACUC G CCAAAAGA	1284	TCTTTTGG GGCTAGCTACAACGA GAGTGTGT	4139
1480	GAUUACCU G CAGCAGCU	1285	AGCTGCTG GGCTAGCTACAACGA AGGTAATC	4140
1508	GUCCAUCU G CAGCGGGC	1286	GCCCGCTG GGCTAGCTACAACGA AGATGGAC	4141
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1578	AUUGUGCU G CUGACGGA	1292	TCCGTCAG GGCTAGCTACAACGA AGCACAAT	4143
1613	AAGUGGGU G CUUUAACG	1294	CGTTAAAG GGCTAGCTACAACGA ACCCACTT	4144
1639	AAAGUGGU G CCAUCAUC	1296	GATGATGG GGCTAGCTACAACGA ACCACTTT	4145
1657	ACACAGUC G CUUUGGGG	1297	CCCCAAAG GGCTAGCTACAACGA GACTGTGT	4146
1672	GGCCCUCU G CAGCUCAA	1298	TTGAGCTG GGCTAGCTACAACGA AGAGGGCC	4147
1726	AGACAUAU G CUUCAGAU	1300	ATCTGAAG GGCTAGCTACAACGA ATATGTCT	4148
1762	UCAUUGAU G CUUUUGGG	1302	CCCAAAAG GGCTAGCTACAACGA ATCAATGA	4149
1805	CUCUCAGC G CUCCAUCC	1303	GGATGGAG GGCTAGCTACAACGA GCTGAGAG	4150
1923	UGGACAAC G CAGCCUCC	1307	GGAGGCTG GGCTAGCTACAACGA GTTGTCCA	4151
2026	CAGGCAUU G CUAAGGUU	1308	AACCTTAG GGCTAGCTACAACGA AATGCCTG	4152
2055	UACAGUCU G CAAGCAAG	1309	CTTGCTTG GGCTAGCTACAACGA AGACTGTA	4153
2098	CGUCCCGU G CGUCCAAU	1312	ATTGGACG GGCTAGCTACAACGA ACGGGACG	4154
2107	CGUCCAAU G CUACCCUG	1313	CAGGGTAG GGCTAGCTACAACGA ATTGGACG	4155
2115	GCUACCCU G CCUCCAAU	1314	ATTGGAGG GGCTAGCTACAACGA AGGGTAGC	4156
2185	UAGUUUAU G CAAAUAUU	1317	AATATTTG GGCTAGCTACAACGA ATAAACTA	4157
2195	AAAUAUUC G CCAAGGAG	1318	CTCCTTGG GGCTAGCTACAACGA GAATATTT	4158
2296	GAGCAGGU G CUGAUGCU	1322	AGCATCAG GGCTAGCTACAACGA ACCTGCTC	4159
2302	GUGCUGAU G CUACUAAG	1324	CTTAGTAG GGCTAGCTACAACGA ATCAGCAC	4160
2376	GUAAAGU G CGGGCUCU	1328	AGAGCCCG GGCTAGCTACAACGA ACTTTTAC	4161
2398	GAGUUAAC G CAGCCAGA	1329	TCTGGCTG GGCTAGCTACAACGA GTTAACTC	4162
2584	UCCCAAAU G CUCCCAUA	1337	TATGGGAG GGCTAGCTACAACGA ATTTGGGA	4163
2788	AUACUACU G CUCUCAUC	1348	GATGAGAG GGCTAGCTACAACGA AGTAGTAT	4164
2878	UUUUCAUU G CUAUUCAG	1351	CTGAATAG GGCTAGCTACAACGA AATGAAAA	4165
2929	CCAACAUU G CACGAGUA	1355	TACTCGTG GGCTAGCTACAACGA AATGTTGG	4166
2964	CAGACUCC G CCAGAGAC	1357	GTCTCTGG GGCTAGCTACAACGA GGAGTCTG	4167
2995	AAACGUCU G CUCCUUGU	1360	ACAAGGAG GGCTAGCTACAACGA AGACGTTT	4168
3078	GGAGAACU G CAGCUGUC	1361	GACAGCTG GGCTAGCTACAACGA AGTTCTCC	4169
3294	AAUAAAAU G CUAAACAA	1366	TTGTTTAG GGCTAGCTACAACGA ATTTTATT	4170
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52	AUUUUCUU G UUUAAGGG	1368	CCCTTAAA GGCTAGCTACAACGA AAGAAAAT	4172
75	GAAGAGGU G UUGAGGUU	1369	AACCTCAA GGCTAGCTACAACGA ACCTCTTC	4173
86	GAGGUUAU G UCAAGCAU	1370		4174
—	AAGAUAUU G UUAUCAUU	1371	AATGATAA GGCTAGCTACAACGA AATATCTT	4175
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221			TATAGACA GGCTAGCTACAACGA ACGTTTCC	4177
253	GGAAACGU G UGUCUAUA	1373	AATATAGA GGCTAGCTACAACGA ACGTTT	4178
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273		 		41/9
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1795		-		4207
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	GACACUUU G UUUCUUAU	1405	ATAAGAAA GGCTAGCTACAACGA AAAGTGTC	4209
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2227	GGGCCAGU G UCACAGCC	1408	GGCTGTGA GGCTAGCTACAACGA ACTGGCCC	4212
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2368	GAUACAGU G UAAAAGUG	1410	CACTTTTA GGCTAGCTACAACGA ACTGTATC	4214
2439	GGAGCACU G UACAUACC	1411	GGTATGTA GGCTAGCTACAACGA AGTGCTCC	4215
2512	AGGAUGAU G UUCAACAC	1412	GTGTTGAA GGCTAGCTACAACGA ATCATCCT	4216
2529	AAGCAAGU G UGUUUCAG	1413	CTGAAACA GGCTAGCTACAACGA ACTTGCTT	4217
2531	GCAAGUGU G UUUCAGCA	1414	TGCTGAAA GGCTAGCTACAACGA ACACTTGC	4218
2563	GCUCAUUU G UGGCUUCU	1415	AGAAGCCA GGCTAGCTACAACGA AAATGAGC	4219
2575	CUUCUGAU G UCCCAAAU	1416	ATTTGGGA GGCTAGCTACAACGA ATCAGAAG	4220
2829	GUCUUUUU G UUUAAACC	1417	GGTTTAAA GGCTAGCTACAACGA AAAAAGAC	4221
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2943	GUAUCUUU G UUUAUUCC	1419	GGAATAAA GGCTAGCTACAACGA AAAGATAC	4223
3002	UGCUCCUU G UCCUAAUA	1420	TATTAGGA GGCTAGCTACAACGA AAGGAGCA	4224
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3084	CUGCAGCU G UCAAUAGC	1422	GCTATTGA GGCTAGCTACAACGA AGCTGCAG	4226
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3182	GACUUCCU G UAGGGGGC	1425	GCCCCCTA GGCTAGCTACAACGA AGGAAGTC	4229
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3227	UACUAAAU G UAUUCCUG	1427	CAGGAATA GGCTAGCTACAACGA ATTTAGTA	4231
3235	GUAUUCCU G UAGGGGGC	1428	GCCCCTA GGCTAGCTACAACGA AGGAATAC	4232
3256	UACUAAAU G UAUUUUAG	1429	CTAAAATA GGCTAGCTACAACGA ATTTAGTA	4233
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73	AUGAAGAG G UGUUGAGG	1431		4235
81	GUGUUGAG G UUAUGUCA	1432	CCTCAACA GGCTAGCTACAACGA CTCTTCAT	4236
91	UAUGUCAA G CAUCUGGC		TGACATAA GGCTAGCTACAACGA CTCAACAC	4237
91		1434	GCCAGATG GGCTAGCTACAACGA TTGACATA	4238
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	CUGGCACA G CUGAAGGC	1436	GCCTTCAG GGCTAGCTACAACGA TGTGCCAG	4240
110	AGCUGAAG G CAGAUGGA	1437	TCCATCTG GGCTAGCTACAACGA CTTCAGCT	4241
130	AUUUACAA G UACGCAAU	1438	ATTGCGTA GGCTAGCTACAACGA TTGTAAAT	4242
182	AGACAAGA G CAAUAGUA	1439	TACTATTG GGCTAGCTACAACGA TCTTGTCT	4243
188	GAGCAAUA G UAAAACAC	1440	GTGTTTTA GGCTAGCTACAACGA TATTGCTC	4244
202	CACAUCAG G UCAGGGGG	1441	CCCCCTGA GGCTAGCTACAACGA CTGATGTG	4245
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242	UCCGAUAA G UUGGAAAC	1443	GTTTCCAA GGCTAGCTACAACGA TTATCGGA	4247
251	UUGGAAAC G UGUGUCUA	1444	TAGACACA GGCTAGCTACAACGA GTTTCCAA	4248
287	AUAUAAUG G UAAAGAAA	1445	TTTCTTTA GGCTAGCTACAACGA CATTATAT	4249
305	ACACCUUC G UAACCCGC	1446	GCGGGTTA GGCTAGCTACAACGA GAAGGTGT	4250
349	GAUGUACA G CAAUUGGGG	1447	CCCCATTG GGCTAGCTACAACGA TGTACATC	4251
357	GCAAUGGG G CCAUUUAA	1448	TTAAATGG GGCTAGCTACAACGA CCCATTGC	4252
368	AUUUAAGA G UUCUGUGU	1449	ACACAGAA GGCTAGCTACAACGA TCTTAAAT	4253
406	UAGAAGGG G CCCUGAGU	1450	ACTCAGGG GGCTAGCTACAACGA CCCTTCTA	4254
413	GGCCCUGA G UAAUUCAC	1451	GTGAATTA GGCTAGCTACAACGA TCAGGGCC	4255
429	CUCAUUCA G CUGAACAA	1452	TTGTTCAG GGCTAGCTACAACGA TGAATGAG	4256
443	CAACAAUG G CUAUGAAG	1453	CTTCATAG GGCTAGCTACAACGA CATTGTTG	4257
452	CUAUGAAG G CAUUGUCG	1454	CGACAATG GGCTAGCTACAACGA CTTCATAG	4258
460	GCAUUGUC G UUGCAAUC	1455	GATTGCAA GGCTAGCTACAACGA GACAATGC	4259
520	AGGACAUG G UGACCCAG	1456	CTGGGTCA GGCTAGCTACAACGA CATGTCCT	4260
529	UGACCCAG G CAUCUCUG	1457	CAGAGATG GGCTAGCTACAACGA CTGGGTCA	4261
550	UGUUUGAA G CUACAGGA	1458	TCCTGTAG GGCTAGCTACAACGA TTCAAACA	4262
561	ACAGGAAA G CGAUUUUA	1459	TAAAATCG GGCTAGCTACAACGA TTTCCTGT	4263
616	AGACAAAG G CUGACUAU	1460	ATAGTCAG GGCTAGCTACAACGA CTTTGTCT	4264
667	AUGUUCUG G UUGCUGAG	1461	CTCAGCAA GGCTAGCTACAACGA CAGAACAT	4265
675	GUUGCUGA G UCUACUCC	1462	GGAGTAGA GGCTAGCTACAACGA TCAGCAAC	4266
689	UCCUCCAG G UAAUGAUG	1463	CATCATTA GGCTAGCTACAACGA CTGGAGGA	4267
711	UACACUGA G CAGAUGGG	1464	CCCATCTG GGCTAGCTACAACGA TCAGTGTA	4268
719	GCAGAUGG G CAACUGUG	1465	CACAGTTG GGCTAGCTACAACGA CCATCTGC	4269
737	AGAGAAGG G UGAAAGGA	1466	TCCTTTCA GGCTAGCTACAACGA CCTTCTCT	4270
780	GGAAAAA G UUAGCUGA	1467	TCAGCTAA GGCTAGCTACAACGA TTTTTTCC	4271
784	AAAAGUUA G CUGAAUAU	1468	ATATTCAG GGCTAGCTACAACGA TAACTTTT	4272
803	ACCACAAG G UAAGGCAU	1469	ATGCCTTA GGCTAGCTACAACGA CTTGTGGT	4273
808	AAGGUAAG G CAUUUGUC	1470	GACAAATG GGCTAGCTACAACGA CTTACCTT	4274
822	GUCCAUGA G UGGGCUCA	1471	TGAGCCCA GGCTAGCTACAACGA TCATGGAC	4275
826	AUGAGUGG G CUCAUCUA	1472	TAGATGAG GGCTAGCTACAACGA CCACTCAT	4276
844	GAUGGGGA G UAUUUGAC	1473	GTCAAATA GGCTAGCTACAACGA TCCCCATC	4277
855	UUUGACGA G UACAAUAA	1474	TTATTGTA GGCTAGCTACAACGA TCGTCAAA	4278
901	GAAUACAA G CAGUAAGA	1475	TCTTACTG GGCTAGCTACAACGA TTGTATTC	4279
904	UACAAGCA G UAAGAUGU	1476	ACATCTTA GGCTAGCTACAACGA TGCTTGTA	4280
916	GAUGUUCA G CAGGUAUU	1477	AATACCTG GGCTAGCTACAACGA TGAACATC	4281
920	UUCAGCAG G UAUUACUG	1478	CAGTAATA GGCTAGCTACAACGA CTGCTGAA	4282
929	UAUUACUG G UACAAAUG	1479	CATTTGTA GGCTAGCTACAACGA CAGTAATA	4283
940	CAAAUGUA G UAAAGAAG	1480	CTTCTTTA GGCTAGCTACAACGA TACATTTG	4284
948	GUAAAGAA G UGUCAGGG	1481	CCCTGACA GGCTAGCTACAACGA TTCTTTAC	4285
959	UCAGGAG G CAGCUGUU	1482	AACAGCTG GGCTAGCTACAACGA CTCCCTGA	4286
962	GGAGGCA G CUGUUACA	1483	TGTAACAG GGCTAGCTACAACGA TGCCTCCC	4287
994	UCAAUAAA G UUACAGGA	1484	TCCTGTAA GGCTAGCTACAACGA TTTATTGA	4288
1023	GGAUGUGA G UUUGUUCU	1485	AGAACAAA GGCTAGCTACAACGA TCACATCC	4289
1054	CGGAGAAG G CUUCUAUA	1486	TATAGAAG GGCTAGCTACAACGA CTTCTCCG	4290
1090	AUUCUAUA G UUGAAUUC	1487	GAATTCAA GGCTAGCTACAACGA TATAGAAT	4291
1126	ACAAAGAA G CUCCAAAC	1488	GTTTGGAG GGCTAGCTACAACGA TTCTTTGT	4291
1137	CCAAACAA G CAAAAUCA	1489	TGATTTTG GGCTAGCTACAACGA TTGTTTGG	4292
1163	UCUCCGAA G CACAUGGG	1490	CCCATGTG GGCTAGCTACAACGA TTCGGAGA	4293
1174	CAUGGGAA G UGAUCCGU	1490	ACGGATCA GGCTAGCTACAACGA TTCCCATG	
1181	AGUGAUCC G UGAUUCUG	1491	CAGAATCA GGCTAGCTACAACGA TICCCAIG	4295
1224	ACAACACA G CCACCAAA	1492		4296
1279	UGUGUUUA G UCCUUGAC	1493	TTTGGTGG GGCTAGCTACAACGA TGTGTTGT GTCAAGGA GGCTAGCTACAACGA TAAACACA	4297
1298				4298
	AUCUGGAA G CAUGGCGA	1495	TCGCCATG GGCTAGCTAGAACGA TTCCAGAT	4299
1303	GAAGCAUG G CGACUGGU	1496	ACCAGTCG GGCTAGCTACAACGA CATGCTTC	4300
1310	GGCGACUG G UAACCGCC	1497	GGCGGTTA GGCTACCTACAACGA CAGTCGCC	4301
1336	UGAAUCAA G CAGGCCAG	1498	CTGGCCTG GGCTAGCTACAACGA TTGATTCA	4302

1344 GAGGCCA CUUUUCCU 1499 AAAGCTGG GSCTAGCTACAACGA CTGCTTCA 4303 1363 IGCAGACA GUUGAGCU 1501 CAGCTCAA GGCTAGCTACAACGA TGGCCTGC 4306 1366 ACAGUUGA CUGAGGUC 1502 GACCCCAG GGCTAGCTACAACGA TGAACTGT 4305 1374 GAGCUGGG GUUGAGGU 1503 ACCCAGGA GGCTAGCTACAACGA TCAACTGT 4307 1336 ACAGUUGA CUCUGGGU 1503 ACCCAGGA GGCTAGCTACAACGA CAACGCAC 4308 1339 UUGAGAACA GUCUGCCC 1505 GAGGTCA GGGCTAGCTACAACGA CACCCCAA 4308 1403 AUJUGACAA GUCUGCCC 1505 GAGGTCA GGCTAACACGA CACCCAA 4308 1403 AUJUGACAA GUCUGCCC 1506 GGGCAGCA GGCTAGCTACAACGA TTTGTACA 1412 UUGACAA GUGACUCA 1507 TGAGTTCA GGCTAGCTACAACGA TTTGTACA 4310 1412 UUGACAA GUGACUCA 1509 TGTCATCA GGCTAGCTACAACGA TTTGTACA 4311 1414 GAUAAACA GUGACUCA 1509 TGTCATCA GGCTAGCTACAACGA TTTGTACA 4312 1415 AAACAGUG GAGUACCA 1509 TGTCATCA GGCTAGCTACAACGA TTTGTACA 4314 1418 CAGUGCA GUUCAGGA 1510 CCCTGTCA GGCTAGCTACAACGA CACTGTTT 4312 1418 CAGUGCA GUUCAGGA 1511 TGAAGCTG GGCTAGCTACAACGA CACTGTT 4314 1418 CAGUGCA GUUCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TGCCACTC 4314 1418 CAGUGCA GUUCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TGCCACTC 4317 1419 CUUCAGCA GUUCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TCCCACTC 4317 1419 CUUCAGCA GUUCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TCCCACTC 4317 1511 CAUCUGCA GCGGCUUC 1513 GAGTGGAAG GGCTAGCTACAACGA TCCCACTC 4317 1512 CAUCUGCA GUUCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TCCCACTC 4319 1513 CAUCUGCA GUUCAGGA 1514 GAAGCCCA GGCTTACCAACGA CCCCTCCC 4317 1514 CAACCAAA GUUCAGCA 1515 GATGGAAG GCCTAGCTACAACGA TCCCACTC 4319 1515 UCCUGAGA GUUCAGCA 1516 AGTGAAGA GGCTAGCTACAACGA TCCCACTC 4319 1516 GATGGAAGA GUUCAGA 1517 TGTGAAG GGCTAGCTACAACGA TCCATTCA 4320 1617 ACAACAAA GUUCAGA 1518 TTAGAGG GGCTAGCTACAACGA TCCATTCA 4321 1618 ACAACAAA GUUCAGAA 1519 TTAGAGG GGCTAGCTACAACGA TCCATTCA 4321 1619 CA					
1368	\vdash		1499		4303
1368	1344	GCAGGCCA G CUUUUCCU	1500	AGGAAAAG GGCTAGCTACAACGA TGGCCTGC	4304
1374	1363	UGCAGACA G UUGAGCUG	1501	CAGCTCAA GGCTAGCTACAACGA TGTCTGCA	4305
1381 GGUCCUGG G UUGGGAUG 1504 CATCCCAA GGCTAGCTACAGGA CATCCCAA 4308 1403 AUUUGACA G UGCUGCCC 1506 GGGCAGCA GGCTAGCTACAGGA CATCCCAA 4308 1403 AUUUGACA G UGCAGCCCA 1507 TOASTITCA GGCTAGCTACAGGA TATCCAAA 4310 1412 UGUACAAA G UGAACUCA 1507 TOASTITCA GGCTAGCTACAAGGA TATCTACAA 4311 1442 GAUAACAA G UGACAGCA 1508 CATCCCAA GGCTAGCTACAAGGA TATCTACA 4311 1442 GAUAACAA G UGACAGGA 1508 CATCCCAA GGCTAGCTACAAGGA TATTTACA 4311 1448 AAACAGUG G CAGUGACA 1509 TOTCACTG GGCTAGCTACAAGGA TGTTTATC 4312 1448 CAGUGGCA G UGACAGGA 1510 CCCTOTCA GCTAGCTACAAGGA TGCCACTG 4314 1448 CAGUGGCA G CAGCUUCA 1511 TOAAGCTG GGCTAGCTACAAGGA TGCCACTG 4314 1448 UACCUGCA G CAGCUUCA 1511 TOAAGCTG GGCTAGCTACAAGGA TGCCACTG 4315 1468 CUGCAGAGA G CUCCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TGCCACCCA 4316 1500 GGAGGACA G UCCAUCUG 1513 CAGATGGA GGCTAGCTACAACGA TGCCACCCA 4316 1500 GGAGGACA G UCCAUCUG 1514 GAAGCCGG GGCTAGCTACAACGA TCCCACCACA 4318 1515 UUCCACCCA G CUUCGAUC 1515 GATCGAAG GGCTAGCTACAACGA CCACTTATA 4318 1515 UUCCAUCUG G CUUCGAUC 1516 GATCGAAG GGCTAGCTACAACGA CCACTTATA 4320 1607 CACUAUMA G UGGUUWAA 1518 TATAAGCA GGCTAGCTACAACGA CCACTTATA 4321 1611 AUAACGAG G UCCAUCAC 1517 AGCACCCA GGCTAGCTACAACGA CCACTTATA 4322 1624 UUAACGAG G UCCAACCA 1519 TTGTTTGA GGCTAGCTACAACGA CCACTTATA 4323 1634 CAAACAAA G UGGUGCCA 1520 TGGCACCA GGCTAGCTACAACGA CACTTTTTT 4325 1644 UUCACACAC G UCCAUCUG 1521 TGATGGCA GGCTAGCTACAACGA CCACTTATA 4326 1644 UUCACACAC G UCCAUCUG 1521 TGATGGCA GGCTAGCTACAACGA CCCTATGA 4326 1645 CUCUUGAG G UCCAACAA 1524 TCCTGAG GGCTAGCTACAACGA CCCTATGA 4326 1645 CUCUUGAG G UCCAACAA 1524 TCCTGAG GGCTAGCTACAACGA CCCTATGA 4326 1645 CUCUUGAG G UUCCAACA 1524 TCCTGAG GGCTAGCTACAACGA CCCTATGA 4326 1645 CUCUUGAG G UUCCAACA 1524 TCCTGAG GGCTAGCTACAACGA CCCTATTC 4330 1724 CUCUUGAG G UUCCAACA 1524 TCCTGAG GGCTAGCTACAAC	1368	ACAGUUGA G CUGGGGUC	1502	GACCCCAG GGCTAGCTACAACGA TCAACTGT	4306
1399	1374	GAGCUGGG G UCCUGGGU	1503	ACCCAGGA GGCTAGCTACAACGA CCCAGCTC	4307
1403 AUUUGACA G UGCAUCCC 1506 GGCAGGC GGCTAGCTACAACGA TOTCAAAT 4310 1421 UGUACAAA G UGAACUCA 1507 TOAOTTCA GGCTAGCTACAACGA TOTTCACA 4311 1445 AAACAGUG G CAGUGACA 1509 TOTCACTG GGCTAGCTACAACGA TOTTTATC 4311 1446 CAGUGGCA G UGACAGGG 1510 CCCTOTCA GGCTAGCTACAACGA CACTGTTT 4313 1448 CAGUGGCA G UGACAGGG 1510 CCCTOTCA GGCTAGCTACAACGA TGCACCTG 4314 1448 UACCUGCA G CAGCUUCA 1511 TGAAGCTG GGCTAGCTACAACGA TGCAGGTA 4315 1486 CUGCAGGA G CUUCAGGA 1512 TCCTGAAG GGCTAGCTACAACGA TGCAGGTA 4315 1500 GGAGGGGA G UUCCAGCU 1513 CAGATGGA GGCTAGCTACAACGA TGCAGGTA 4315 1500 GGAGGGA G UCCAUCUG 1513 CAGATGGA GGCTAGCTACAACGA TGCAGGTA 4315 1511 CAUCUGCA G CGUGCAUCU 1514 GAAGCCCG GGCTAGCTACAACGA TGCAGGATG 4316 1515 UCCAUCUG G CUUCAGAU 1515 AGTCAGAG GGCTAGCTACAACGA TGCAGGATG 4319 1525 UUCGAUCG G CAUUUACU 1516 AGTCAGAG GGCTAGCTACAACGA CGGATCGA 4320 1607 CACUAUAA G UGGGGGC 1517 AGCACCCA GGCTAGCTACAACGA CGGATCGA 4320 1611 AUAACUGG G UCCAUCA 1518 TATAAGCA GGCTAGCTACAACGA CCGATCTAT 4322 1624 UUAACGAG G UCCAUCA 1520 TGGACCA GGCTAGCTACAACGA CCCATTAT 4323 1634 CAAACAAA G UGGUGCA 1520 TGGACCA GGCTAGCTACAACGA CTCGTTA 4323 1634 CAAACAAA G UGGUGCA 1520 TGGACCA GGCTAGCTACAACGA CTCGTTA 4324 1637 ACAAAGUG G UCCAUCA 1521 TGATGGCA GGCTAGCTACAACGA CTCGTTA 4325 1634 UCCACCAC G UCCAUCA 1521 TGATGGCA GGCTAGCTACAACGA CTCTTTA 4326 1636 GCUUUGAG G UCCAUCA 1521 TGATGGCA GGCTAGCTACAACGA CTCTTTC 4325 1634 CAAACAAA G UGACACA 1520 TGGACCA GGCTAGCTACAACGA CTCTTTC 4326 1636 GCUUUGAG G UCCAUCA 1522 TGATGGCA GGCTAGCTACAACGA CTCTTTC 4326 1635 TGCACAG GGCTAGCTACAACGA CTCTTTC 4326 1635 TGCACAG GGCTAGCTACAACGA CTCTTTC 4326 1636 GCUUUGAG G UGUACAA 1525 TTGTGAA GGCTAGCTACAACGA CTCTTTC 4330 1738 CAGACAAG G UUACAGA 1526 TCTGTAA 4327 1731 GUUUGGG G CCUUUGA 1526 TTGTGAA GGCTAGCTACAACGA CTCTTTC 4330 1738 CAGACAGA G UUACAGA	1381	GGUCCUGG G UUGGGAUG	1504	CATCCCAA GGCTAGCTACAACGA CCAGGACC	4308
1442	1390	UUGGGAUG G UGACAUUU	1505	AAATGTCA GGCTAGCTACAACGA CATCCCAA	4309
1442 GAUAAACA G UGGCAGUG 1508 CACTUCCA GGCTAGCTACAACGA TGTTTATC 4312 1445 AAACAGUG G CAGUGACA 1509 TOTCACTG GGCTAGCTACAACGA CACTGTT 4313 1448 CAGUGGCA G UGACAGGG 1510 CCCGTCTA GGCTAGCTACAACGA TGCAGCTG 4314 1483 UACCUGCA G CAGCUUCA 1511 TEAAGCTG GGCTAGCTACAACGA TGCAGGTA 4315 1486 CUGCAGCA G CUUCAGGA 1512 TECTGAAG GGCTAGCTACAACGA TGCAGGTA 4315 1500 GGAGGGAG G UCCAUCUG 1513 CAGATGGA GGCTAGCTACAACGA TGCCACCG 4317 1511 CAUCUGCA G CUUCAUCU 1513 CAGATGGA GGCTAGCTACAACGA TGCCACCG 4317 1511 CAUCUGCA G CUUCAUCU 1514 GAAGCCCG GGCTAGCTACAACGA TGCCACCG 4318 1515 UUCAACCGG G CUUCAUCU 1515 AGTAGATG GGCTAGCTACAACGA TGCAGCGC 4319 1515 UUCAACCGG G CUUCAUCU 1516 AGTAGATG GGCTAGCTACAACGA CGGCTCGC 4319 1515 UUCAACCGG G CUUCAUCU 1516 AGTAGATG GGCTAGCTACAACGA CGACTGCA 4320 1607 CACUAUNA G UGGUGCCA 1519 TATAAGCA GGCTAGCTACAACGA CCGACTTAT 4322 1611 AUAAGUGG G UGCUUUAA 1518 TATAAGCA GGCTAGCTACAACGA CCACTTTAT 4323 1634 CAAACAAA G UGGUGCCA 1520 TGGCACCA GGCTAGCTACAACGA CCACTTTAT 4325 1634 CAAACAAA G UGGUGCCA 1521 TGATGGCA GGCTAGCTACAACGA CCACTTTAT 4325 1634 CAAACAAA G UGGUGCCA 1521 TGATGGCA GGCTAGCTACAACGA CCACTTTT 4325 1645 UCCACACA G UCCAUCUC 1523 GCGAGGGG GGCTAGCTACAACGA CCACTTTCT 4326 1645 UCCACACA G UCCAUCUC 1523 GCGAGGGG GGCTAGCTACAACGA CCACTTTCT 4326 1645 UCCACACA G UCCAUCUC 1523 GCGAGGGG GGCTAGCTACAACGA CCACTTCT 4326 1645 UCCACACA G UUCACAGA 1524 TTCTTGAG GGCTAGCTACAACGA CCACTTCT 4330 1712 GACAGGAG G UUCACAGA 1524 TTCTTGAG GGCTAGCTACAACGA CCACTTCT 4330 1712 GACAGAGG G UUUACAGA 1524 TTCTTGAG GGCTAGCTACAACGA TCCACTGC 4331 1724 1724 1725	1403	AUUUGACA G UGCUGCCC	1506	GGGCAGCA GGCTAGCTACAACGA TGTCAAAT	4310
1445	1421	UGUACAAA G UGAACUCA	1507	TGAGTTCA GGCTAGCTACAACGA TTTGTACA	4311
1448	1442	GAUAAACA G UGGCAGUG	1508	CACTGCCA GGCTAGCTACAACGA TGTTTATC	4312
1483	1445	AAACAGUG G CAGUGACA	1509	TGTCACTG GGCTAGCTACAACGA CACTGTTT	4313
1486	1448	CAGUGGCA G UGACAGGG	1510	CCCTGTCA GGCTAGCTACAACGA TGCCACTG	4314
1510	1483	UACCUGCA G CAGCUUCA	1511	TGAAGCTG GGCTAGCTACAACGA TGCAGGTA	4315
1500	1486	CUGCAGCA G CUUCAGGA	1512	TCCTGAAG GGCTAGCTACAACGA TGCTGCAG	4316
1511	1500	GGAGGGAC G UCCAUCUG	1513	CAGATGGA GGCTAGCTACAACGA GTCCCTCC	
1515	1511	CAUCUGCA G CGGGCUUC	1514	GAAGCCCG GGCTAGCTACAACGA TGCAGATG	
1525	1515	UGCAGCGG G CUUCGAUC	1515		
1607					
1611	1607	CACUAUAA G UGGGUGCU			
1624 UUAACGAG G UCAAACAA 1519 TTGTTTGA GGCTAGCTACAACGA CTGTTTAA 4323 1634 CAAACAAA G UGGUGCCA 1520 TGGCACCA GGCTAGCTACAACGA CTTGTTTG 4325 1657 ACAAAGUG G UCGCUUG 1521 TGATGGCA GGCTAGCTACAACGA CACTTTGT 4325 1655 UCCACACA G UCGAGUUG 1522 CAAAGGG GGCTAGCTACAACGA TCGTGGG 4326 1665 GCULUGCA G UCAAGAA 1524 TCTTGAG GGCTAGCTACAACGA TCCTCTAG 4327 1675 CULUGGAG G CUCAAGAA 1525 TTGGACA GGCTAGCTACAACGA TCCTCTAG 4329 1712 GACAGGAG G UUCAGAA 1525 TTGGACA GGCTAGCTACAACGA CTCTGTC 4330 1738 CAGAUCAA G UUCAGAA 1527 TTGTGAA GGCTAGCTACAACGA TCCTGTC 4331 1791 CUUUUGGG G CCUUUCA 1529 TGAAAGAG GGCTAGCTACAACGA TCCTTCAA GGCTAGCTACAACGA TCCAAAAAAAAAAAAAAAAAAAAAAAAA		AUAAGUGG G UGCUUUAA			
1634 CAAACAAA G UGGUGCA 1520 TGGCACCA GGCTAGCTACAACGA TTTGTTTG 4324 1637 ACAAAGUG G UGCCAUCA 1521 TGATGGCA GGCTAGCTACAACGA CACTTTGT 4325 1654 UCCACACA G UCGCUUUG 1522 CAAAGCGA GGCTAGCTACAACGA TGTGTGGA 4326 1665 GCUUUGGG G CCCUCUGC 1523 GCAGAGGG GGCTAGCTACAACGA TGCAGAGC 4327 1675 CCUCUGCA G CUCAAGAA 1524 TTCTTGAG GGCTAGCTACAACGA TCCCTACA 4328 1692 CUAGAGGA GUUUCAGA 1525 TTGGACAG GGCTAGCTACAACGA TCCCTGTC 4330 1712 GACAGGAG G UUUACAGA 1527 GTTCTGAA GGCTACAACGA TCCCTGTC 4331 1738 CAGAUCAB G UUCAGAA 1527 GTTCTGAA GGCTACAACGA TTGATCTC 4331 1751 GAACAGGA G CUCCAUUG 1529 TGAAAGGG GGCTAGCTACAACGA TCCCAATAC 4332 1771 CUUUUGGG G CCCUUCAU 1531 ATGGACGG GGCTAGCTACAACGA TCCCAATAC 4333 1803 GUCUCUCA G CUUGAGAG 1531 ATGGACGG GGCTAGCTACAACGA TCCAATTC 4334 1803 GUCUCUCA G CUUGAGAG 1531 ATCCATGG GGCTAGCTACAACGA TGTCTCA	\vdash				
1637 ACAAAGUG G UGCCAUCA 1521 TGATGGCA GGCTAGCTACAACGA CACTTTGT 4325 1654 UCCACACA G UCGCUUUG 1522 CAAAGCGA GGCTAGCTACAACGA TGTGTGGA 4326 1665 GCUUUGGG G CCUCUGC 1523 GCAGAGGG GGCTAGCTACAACGA TGTGTGGA 4326 1675 CCUCUGCA G CUCAAGAA 1524 TTCTTGAG GGCTAGCTACAACGA TGCAGAGG 4327 1692 CUAGAGGA G CUUCAA 1525 TTGGACAG GGCTAGCTACAACGA TCCTCTAG 4329 1712 GACAGGAG G UUUACAGA 1526 TCTGTAAA GGCTAGCTACAACGA CTCCTGTC 4330 1738 CAGAUCAA G UUCAGAA 1527 GTTCTGAA GGCTAGCTACAACGA CTCTATGTC 4331 1771 GAACAAUG G CUCCUUUG 1528 CAATGAGG GGCTAGCTACAACGA CATTGTTC 4332 1771 CUUUUGGG G CCUUUCA 1529 TGAAAGGG GGCTAGCTACAACGA CCCAAAAG 4333 1792 GAAAGAUGA G CUGUCUU 1530 AGAGACAG GGCTAGCTACAACGA CCCAAAAG 4336 1883 GCUUGAGA G UGAGGA 1531 ATGCATCA GGCTAGCTACAACGA TGAGAGA 4337 1847 CCAGAACA G CAGUGGA 1534 TCCACTGG GGCTAGCTACAACGA TGTCT					
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1665 GCUUUGGG G CCCUCUGC 1523 GCAGAGGG GCTAGCTACAACGA CCCAAAGC 4327 1675 CCUCUGCA G CUCAAGAA 1524 TTCTTGAG GGCTAGCTACAACGA TGCAGAGG 4328 1692 CUAGAGGA G CUGUCCAA 1525 TTGGACAG GGCTAGCTACAACGA TCCTCTAG 4328 1712 GACAGGAG G UUUACAGA 1525 TTGTGTAAA GGCTAGCTACAACGA TCCTCTGT 4330 1738 CAGAUCAA G UUCAGAAC 1527 GTTCTGAA GGCTAGCTACAACGA TTGATCT 4331 1751 GAACAGUG G CCUCUUCA 1528 CAATGAGG GGCTAGCTACAACGA CCAATGTT 4332 1771 CUUUUGGG G CCCUUUCA 1529 TGAAAGGG GGCTAGCTACAACGA TCCATTC 4334 1803 GUCUCUCA G CGUUCCU 1530 AGAGACAG GGCTAGCTACAACGA TCCATTC 4334 1803 GUCUCUCA G CGUUCAU 1531 ATGGAGCG GGCTAGCTACAACGA TGAGTACA 4336 1815 UCCAUCCA G CUUGAGAG 1533 ATCCCTTAG GGCTAGCTACAACGA TGAGTACA 4336 1823 GCUUGAGA G UAAGGGAU 1534 TCCACTGG GGCTAGCTACAACGA TGTCTAGG 4337 1847 CCCAGACA G UAGACA 1534 TCCATGG GGCTAGCTACAACGA TGTCTAG					
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2002CCAAAAUG G CCUACCUC1547GAGGTAGG GGCTAGCTACAACGA CATTTTGG 43512021AAUCCCAG G CAUUGCUA1548TAGCAATG GGCTAGCTACAACGA CTGGGATT 43522032UUGCUAAG G UUGGCACU1549AGTGCCAA GGCTAGCTACAACGA CTTAGCAA 43532036UAAGGUUG G CACUUGGA1550TCCAAGTG GGCTAGCTACAACGA CAACCTTA 43542051GAAAUACA G UCUGCAAG1551CTTGCAGA GGCTAGCTACAACGA TGTATTTC 43552059GUCUGCAA G CAAGCUCA1552TGAGCTTG GGCTAGCTACAACGA TTGCAGAC 43562063GCAAGCAA G CUCACAAA1553TTTGTGAG GGCTAGCTACAACGA TTGCTTGC 4357					4349
2021 AAUCCCAG G CAUUGCUA 1548 TAGCAATG GGCTAGCTACAACGA CTGGGATT 4352 2032 UUGCUAAG G UUGGCACU 1549 AGTGCCAA GGCTAGCTACAACGA CTTAGCAA 4353 2036 UAAGGUUG G CACUUGGA 1550 TCCAAGTG GGCTAGCTACAACGA CAACCTTA 4354 2051 GAAAUACA G UCUGCAAG 1551 CTTGCAGA GGCTAGCTACAACGA TGTATTTC 4355 2059 GUCUGCAA G CAAGCUCA 1552 TGAGCTTG GGCTAGCTACAACGA TTGCAGAC 4356 2063 GCAAGCAA G CUCACAAA 1553 TTTGTGAG GGCTAGCTACAACGA TTGCTTGC 4357	\vdash				4350
2032UUGCUAAG G UUGGCACU1549AGTGCCAA GGCTAGCTACAACGA CTTAGCAA43532036UAAGGUUG G CACUUGGA1550TCCAAGTG GGCTAGCTACAACGA CAACCTTA43542051GAAAUACA G UCUGCAAG1551CTTGCAGA GGCTAGCTACAACGA TGTATTTC43552059GUCUGCAA G CAAGCUCA1552TGAGCTTG GGCTAGCTACAACGA TTGCAGAC43562063GCAAGCAA G CUCACAAA1553TTTGTGAG GGCTAGCTACAACGA TTGCTTGC4357					4351
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2051 GAAAUACA G UCUGCAAG 1551 CTTGCAGA GGCTAGCTACAACGA TGTATTTC 4355 2059 GUCUGCAA G CAAGCUCA 1552 TGAGCTTG GGCTAGCTACAACGA TTGCAGAC 4356 2063 GCAAGCAA G CUCACAAA 1553 TTTGTGAG GGCTAGCTACAACGA TTGCTTGC 4357					4353
2059 GUCUGCAA G CAAGCUCA 1552 TGAGCTTG GGCTAGCTACAACGA TTGCAGAC 4356 2063 GCAAGCAA G CUCACAAA 1553 TTTGTGAG GGCTAGCTACAACGA TTGCTTGC 4357					4354
2063 GCAAGCAA G CUCACAAA 1553 TTTGTGAG GGCTAGCTACAACGA TTGCTTGC 4357					4355
The state of the s					4356
2091 ACUGUCAC G UCCCGUGC 1554 GCACGGGA GGCTAGCTACAACGA GTGACAGT 4358		GCAAGCAA G CUCACAAA	1553	·	4357
	2091	ACUGUCAC G UCCCGUGC	1554	GCACGGGA GGCTAGCTACAACGA GTGACAGT	4358

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2096	CACGUCCC G UGCGUCCA	1555	TGGACGCA GGCTAGCTACAACGA GGGACGTG	4359
2100	UCCCGUGC G UCCAAUGC	1556	GCATTGGA GGCTAGCTACAACGA GCACGGGA	4360
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2156	GGACACCA G CAAAUUCC	1558	GGAATTTG GGCTAGCTACAACGA TGGTGTCC	4362
2168	AUUCCCCA G CCCUCUGG	1559	CCAGAGGG GGCTAGCTACAACGA TGGGGAAT	4363
2176	GCCCUCUG G UAGUUUAU	1560	ATAAACTA GGCTAGCTACAACGA CAGAGGGC	4364
2179	CUCUGGUA G UUUAUGCA	1561	TGCATAAA GGCTAGCTACAACGA TACCAGAG	4365
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2221	UUCUCAGG G CCAGUGUC	1563	GACACTGG GGCTAGCTACAACGA CCTGAGAA	4367
2225	CAGGGCCA G UGUCACAG	1564	CTGTGACA GGCTAGCTACAACGA TGGCCCTG	4368
2233	GUGUCACA G CCCUGAUU	1565		4369
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2263	GAAAAACA G UUACCUUG	1567		4371
2290	AUAAUGGA G CAGGUGCU	1568	10010000	4372
2294	UGGAGCAG G UGCUGAUG	1569		4373
2318	GGAUGACG G UGUCUACU	1570		4374
2331	UACUCAAG G UAUUUCAC	1571		4375
2357	CACGAAUG G UAGAUACA	1572		4376
2366	UAGAUACA G UGUAAAAG	1573		
2374	GUGUAAAA G UGCGGGCU	1574		4377
2380	AAGUGCGG G CUCUGGGA	 		4378
2392		1575		4379
	UGGGAGGA G GGAGAGGA	1576		4380
2401	UUAACGCA G CCAGACGG	1577		4381
2413	GACGGAGA G UGAUACCC	1578		4382
2424	AUACCCCA G CAGAGUGG	1579		4383
2429	CCAGCAGA G UGGAGCAC	1580		4384
2434	AGAGUGGA G CACUGUAC	1581		4385
2450	CAUACCUG G CUGGAUUG	1582		4386
2523	CAACACAA G CAAGUGUG	1583		4387
2527	ACAAGCAA G UGUGUUUC	1584	GAAACACA GGCTAGCTACAACGA TTGCTTGT	4388
2537	GUGUUUCA G CAGAACAU	1585		4389
2555	CUCGGGAG G CUCAUUUG	1586		4390
2566	CAUUUGUG G CUUCUGAU	1587	ATCAGAAG GGCTAGCTACAACGA CACAAATG	4391
2612	CCCACCUG G CCAAAUCA	1588	TGATTTGG GGCTAGCTACAACGA CAGGTGGG	4392
2632	ACCUGAAG G CGGAAAUU	1589	AATTTCCG GGCTAGCTACAACGA CTTCAGGT	4393
2648	UCACGGGG G CAGUCUCA	1590	TGAGACTG GGCTAGCTACAACGA CCCCGTGA	4394
2651	CGGGGCA G UCUCAUUA	1591	TAATGAGA GGCTAGCTACAACGA TGCCCCCG	4395
2674	CUUGGACA G CUCCUGGG	1592		4396
2704	AUGGAACA G CUCACAAG	1593	CTTGTGAG GGCTAGCTACAACGA TGTTCCAT	4397
2712	GCUCACAA G UAUAUCAU	1594	ATGATATA GGCTAGCTACAACGA TTGTGAGC	4398
2729	UCGAAUAA G UACAAGUA	1595	TACTTGTA GGCTAGCTACAACGA TTATTCGA	4399
2735	AAGUACAA G UAUUCUUG	1596	CAAGAATA GGCTAGCTACAACGA TTGTACTT	4400
2757	AGAGACAA G UUCAAUGA	1597	TCATTGAA GGCTAGCTACAACGA TTGTCTCT	4401
2776	CUCUUCAA G UGAAUACU	1598		4402
2806	CAAAGGAA G CCAACUCU	1599		4403
2821	CUGAGGAA G UCUUUUUG	1600		4404
2861	UGAAAAUG G CACAGAUC	1601		4405
2887	CUAUUCAG G CUGUUGAU	1602		4406
2899	UUGAUAAG G UCGAUCUG	1603		4407
2935	UUGCACGA G UAUCUUUG	1604	GIA I GOOD CONTRACTOR OF THE C	4408
2978	GACACCUA G UCCUGAUG	1605		4409
2991	GAUGAAAC G UCUGCUCC	1606		4410
3023	UAUCAACA G CACCAUUC	1607		4411
3035	CAUUCCUG G CAUUCACA	1608		
3063	AUGUGGAA G UGGAUAGG	1609	CCT TCCT CT C	4412
3081	GAACUGCA G CUGUCAAU	1610		4413
3001	CITICOCCII O COGOCAMO	1010	ATTORCHO GGCTAGCTACAACGA TGCAGTTC	4414

3091	UGUCAAUA G CCUAGGGC	1611	GCCCTAGG GGCTAGCTACAACGA TATTGACA	4415
3098	AGCCUAGG G CUGAAUUU	1612	AAATTCAG GGCTAGCTACAACGA CCTAGGCT	4416
3189	UGUAGGGG G CGAUAUAC	1613	GTATATCG GGCTAGCTACAACGA CCCCTACA	4417
3242	UGUAGGGG G CGAUAUAC	1613	GTATATCG GGCTAGCTACAACGA CCCCTACA	4417
3210	UGUAUAUA G UACAUUUA	1614	TAAATGTA GGCTAGCTACAACGA TATATACA	4418
3279	UGUAGGGG G CGAUAAAA	1615	TTTTATCG GGCTAGCTACAACGA CCCCTACA	4419
21	UGGUACAA A UGGAUGUG	1616	CACATCCA GGCTAGCTACAACGA TTGTACCA	4420
25	ACAAAUGG A UGUGGAAU	1617	ATTCCACA GGCTAGCTACAACGA CCATTTGT	4421
32	GAUGUGGA A UAUAAUUG	1618	CAATTATA GGCTAGCTACAACGA TCCACATC	4422
37	GGAAUAUA A UUGAAUAU	1619	ATATTCAA GGCTAGCTACAACGA TATATTCC	4423
42	AUAAUUGA A UAUUUUCU	1620	AGAAAATA GGCTAGCTACAACGA TCAATTAT	4424
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137	AGUACGCA A UUUGAGAC	1623	GTCTCAAA GGCTAGCTACAACGA TGCGTACT	4427
144	AAUUUGAG A CUAAGAUA	1624	TATCTTAG GGCTAGCTACAACGA CTCAAATT	4428
150	AGACUAAG A UAUUGUUA	1625	TAACAATA GGCTAGCTACAACGA CTTAGTCT	4429
176	UAUUGAAG A CAAGAGCA	1626	TGCTCTTG GGCTAGCTACAACGA CTTCAATA	4430
185	CAAGAGCA A UAGUAAAA	1627	TTTTACTA GGCTAGCTACAACGA TGCTCTTG	4431
193	AUAGUAAA A CACAUCAG	1628	CTGATGTG GGCTAGCTACAACGA TTTACTAT	4432
217	GGUUAAAG A CCUGUGAU	1629	ATCACAGG GGCTAGCTACAACGA CTTTAACC	4433
224	GACCUGUG A UAAACCAC	1630	GTGGTTTA GGCTAGCTACAACGA CACAGGTC	4434
228	UGUGAUAA A CCACUUCC	1631	GGAAGTGG GGCTAGCTACAACGA TTATCACA	4435
238	CACUUCCG A UAAGUUGG	1632	CCAACTTA GGCTAGCTACAACGA CGGAAGTG	4436
249	AGUUGGAA A CGUGUGUC	1633	GACACACG GGCTAGCTACAACGA TTCCAACT	4437
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297	AAAGAAAG A CACCUUCG	1635	CGAAGGTG GGCTAGCTACAACGA CTTTCTTT	4439
308	CCUUCGUA A CCCGCAUU	1636	AATGCGGG GGCTAGCTACAACGA TACGAAGG	4440
331	AGAGAGGA A UCACAGGG	1637	CCCTGTGA GGCTAGCTACAACGA TCCTCTCT	4441
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416	CCUGAGUA A UUCACUCA	1641	TGAGTGAA GGCTAGCTACAACGA TACTCAGG	4445
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470	UGCAAUCG A CCCCAAUG	1646	CATTGGGG GGCTAGCTACAACGA CGATTGCA	4450
476	CGACCCCA A UGUGCCAG	1647	CTGGCACA GGCTAGCTACAACGA TGGGGTCG	4451
488	GCCAGAAG A UGAAACAC	1648	GTGTTTCA GGCTAGCTACAACGA CTTCTGGC	4452
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508	UUCAACAA A UAAAGGAC	1651	GTCCTTTA GGCTAGCTACAACGA TTGTTGAA	4455
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578	UUUCAAAA A UGUUGCCA	1655	TGGCAACA GGCTAGCTACAACGA TTTTGAAA	4459
592	CCAUUUUG A UUCCUGAA	1656	TTCAGGAA GGCTAGCTACAACGA CAAAATGG	4460
601	UUCCUGAA A CAUGGAAG	1657	CTTCCATG GGCTAGCTACAACGA TTCAGGAA	4461
610	CAUGGAAG A CAAAGGCU	1658	AGCCTTTG GGCTAGCTACAACGA CTTCCATG	4462
620	AAAGGCUG A CUAUGUGA	1659	TCACATAG GGCTAGCTACAACGA CAGCCTTT	4463
630	UAUGUGAG A CCAAAACU	1660	AGTTTTGG GGCTAGCTACAACGA CTCACATA	4464
636	AGACCAAA A CUUGAGAC	1661	GTCTCAAG GGCTAGCTACAACGA TTTGGTCT	4465
643	AACUUGAG A CCUACAAA	1662	TTTGTAGG GGCTAGCTACAACGA CTCAAGTT	4466
653	CUACAAAA A UGCUGAUG	1663	CATCAGCA GGCTAGCTACAACGA TTTTGTAG	4467
659	AAAUGCUG A UGUUCUGG	1664	CCAGAACA GGCTAGCTACAACGA CAGCATTT	4468
692	UCCAGGUA A UGAUGAAC	1665	GTTCATCA GGCTAGCTACAACGA TACCTGGA	4469

695	AGGUAAUG A UGAACCCU	1666	AGGGTTCA GGCTAGCTACAACGA CATTACCT	4470
699	AAUGAUGA A CCCUACAC	1667	GTGTAGGG GGCTAGCTACAACGA TCATCATT	4471
715	CUGAGCAG A UGGGCAAC	1668	GTTGCCCA GGCTAGCTACAACGA CTGCTCAG	4472
722	GAUGGGCA A CUGUGGAG	1669	CTCCACAG GGCTAGCTACAACGA TGCCCATC	4473
745	GUGAAAGG A UCCACCUC	1670	GAGGTGGA GGCTAGCTACAACGA CCTTTCAC	4474
761	CACUCCUG A UUUCAUUG	1671	CAATGAAA GGCTAGCTACAACGA CAGGAGTG	4475
789	UUAGCUGA A UAUGGACC	1672	GGTCCATA GGCTAGCTACAACGA TCAGCTAA	4476
795	GAAUAUGG A CCACAAGG	1673	CCTTGTGG GGCTAGCTACAACGA CCATATTC	4477
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860	CGAGUACA A UAAUGAUG	1676	CATCATTA GGCTAGCTACAACGA TGTACTCG	4480
863	GUACAAUA A UGAUGAGA	1677	TCTCATCA GGCTAGCTACAACGA TATTGTAC	4481
866	CAAUAAUG A UGAGAAAU	1678	ATTTCTCA GGCTAGCTACAACGA CATTATTG	4482
873	GAUGAGAA A UUCUACUU	1679	AAGTAGAA GGCTAGCTACAACGA TTCTCATC	4483
887	CUUAUCCA A UGGAAGAA	1680	TTCTTCCA GGCTAGCTACAACGA TGGATAAG	4484
895	AUGGAAGA A UACAAGCA	1681	TGCTTGTA GGCTAGCTACAACGA TCTTCCAT	4485
909	GCAGUAAG A UGUUCAGC	1682	GCTGAACA GGCTAGCTACAACGA CTTACTGC	4486
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978	ACCAAAAG A UGCACAUU	1684	AATGTGCA GGCTAGCTACAACGA CTTTTGGT	4488
989	CACAUUCA A UAAAGUUA	1685	TAACTTTA GGCTAGCTACAACGA TGAATGTG	4489
1002	GUUACAGG A CUCUAUGA	1686	TCATAGAG GGCTAGCTACAACGA CCTGTAAC	4490
1017	GAAAAAGG A UGUGAGUU	1687	AACTCACA GGCTAGCTACAACGA CCTTTTTC	4491
1035	GUUCUCCA A UCCCGCCA	1688	TGGCGGGA GGCTAGCTACAACGA TGGAGAAC	4492
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1074	UUUGCACA A CAUGUUGA	1691	TCAACATG GGCTAGCTACAACGA TGTGCAAA	4495
1082	ACAUGUUG A UUCUAUAG	1692	CTATAGAA GGCTAGCTACAACGA CAACATGT	4496
1095	AUAGUUGA A UUCUGUAC	1693	GTACAGAA GGCTAGCTACAACGA TCAACTAT	4497
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1133	AGCUCCAA A CAAGCAAA	1697	TTTGCTTG GGCTAGCTACAACGA TTGGAGCT	4501
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1149	AAUCAAAA A UGCAAUCU	1699	AGATTGCA GGCTAGCTACAACGA TTTTGATT	4503
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1306	GCAUGGCG A CUGGUAAC	1713	GTTACCAG GGCTAGCTACAACGA CGCCATGC	4517
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1322	CCGCCUCA A UCGACUGA	1715	TCAGTCGA GGCTAGCTACAACGA TGAGGCGG	4519
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1393	GGAUGGUG A CAUUUGAC	1720	GTCAAATG GGCTAGCTACAACGA CACCATCC	4524
1400	GACAUUUG A CAGUGCUG	1721	CAGCACTG GGCTAGCTACAACGA CAAATGTC	4525

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1435	UCAUACAG A UAAACAGU	1723	ACTGTTTA GGCTAGCTACAACGA CTGTATGA	4527
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1457	UGACAGGG A CACACUCG	1726	CGAGTGTG GGCTAGCTACAACGA CCCTGTCA	4530
1473	GCCAAAAG A UUACCUGC	1727	GCAGGTAA GGCTAGCTACAACGA CTTTTGGC	4531
1498	CAGGAGGG A CGUCCAUC	1728	GATGGACG GGCTAGCTACAACGA CCCTCCTG	4532
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1555	AAUAUCCA A CUGAUGGA	1732	TCCATCAG GGCTAGCTACAACGA TGGATATT	4536
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1563	ACUGAUGG A UCUGAAAU	1734	ATTTCAGA GGCTAGCTACAACGA CCATCAGT	4538
1570	GAUCUGAA A UUGUGCUG	1735	CAGCACAA GGCTAGCTACAACGA TTCAGATC	4539
1582	UGCUGCUG A CGGAUGGG	1736	CCCATCCG GGCTAGCTACAACGA CAGCAGCA	4540
1586	GCUGACGG A UGGGGAAG	1737	CTTCCCCA GGCTAGCTACAACGA CCGTCAGC	4541
1595	UGGGGAAG A CAACACUA	1738	TAGTGTTG GGCTAGCTACAACGA CTTCCCCA	4542
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1629	GAGGUCAA A CAAAGUGG	1741	CCACTTTG GGCTAGCTACAACGA TTGACCTC	4545
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		1746	GAACTTGA GGCTAGCTACAACGA CTGAAGCA	4550
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1748	UCAGAACA A UGGCCUCA	1748	TGAGGCCA GGCTAGCTACAACGA TGTTCTGA	4552
1760	CCUCAUUG A UGCUUUUG	1749	CAAAAGCA GGCTAGCTACAACGA CAATGAGG	4553
1787	AUCAGGAA A UGGAGCUG	1750	CAGCTCCA GGCTAGCTACAACGA TTCCTGAT	4554
1830	AGUAAGGG A UUAACCCU	1751	AGGGTTAA GGCTAGCTACAACGA CCCTTACT	4555
1834	AGGGAUUA A CCCUCCAG	1752	CTGGAGGG GGCTAGCTACAACGA TAATCCCT	4556
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1855	GCCAGUGG A UGAAUGGC	1754	GCCATTCA GGCTAGCTACAACGA CCACTGGC	4558
1859	GUGGAUGA A UGGCACAG	1755	CTGTGCCA GGCTAGCTACAACGA TCATCCAC	4559
1870	GCACAGUG A UCGUGGAC	1756	GTCCACGA GGCTAGCTACAACGA CACTGTGC	4560
1877	GAUCGUGG A CAGCACCG	1757	CGGTGCTG GGCTAGCTACAACGA CCACGATC	4561
1895	GGGAAAGG A CACUUUGU	1758	ACAAAGTG GGCTAGCTACAACGA CCTTTCCC	4562
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1921	CCUGGACA A CGCAGCCU	1760	AGGCTGCG GGCTAGCTACAACGA TGTCCAGG	4564
1936	CUCCCCAA A UCCUUCUC	1761	GAGAAGGA GGCTAGCTACAACGA TTGGGGAG	4565
1949	UCUCUGGG A UCCCAGUG	1762	CACTGGGA GGCTAGCTACAACGA CCCAGAGA	4566
1959	CCCAGUGG A CAGAAGCA	1763	TGCTTCTG GGCTAGCTACAACGA CCACTGGG	4567
1985	UGUAGUGG A CAAAAACA	1764	TGTTTTTG GGCTAGCTACAACGA CCACTACA	4568
1991	GGACAAAA A CACCAAAA	1765	TTTTGGTG GGCTAGCTACAACGA TTTTGTCC	4569
1999	ACACCAAA A UGGCCUAC	1766	GTAGGCCA GGCTAGCTACAACGA TTTGGTGT	4570
2014	ACCUCCAA A UCCCAGGC	1767	GCCTGGGA GGCTAGCTACAACGA TTGGAGGT	4571
2046	ACUUGGAA A UACAGUCU	1768	AGACTGTA GGCTAGCTACAACGA TTCCAAGT	4572
2071	GCUCACAA A CCUUGACC	1769	GGTCAAGG GGCTAGCTACAACGA TTGTGAGC	4573
2077	AAACCUUG A CCCUGACU	1770	AGTCAGGG GGCTAGCTACAACGA CAAGGTTT	4574
2083	UGACCCUG A CUGUCACG	1771	CGTGACAG GGCTAGCTACAACGA CAGGGTCA	4575
2105	UGCGUCCA A UGCUACCC	1772	GGGTAGCA GGCTAGCTACAACGA TGGACGCA	4576
2122	UGCCUCCA A UUACAGUG	1773	CACTGTAA GGCTAGCTACAACGA TGGAGGCA	4577
2131	UUACAGUG A CUUCCAAA	1774	TTTGGAAG GGCTAGCTACAACGA CACTGTAA	4578
2140	CUUCCAAA A CGAACAAG	1775	CTTGTTCG GGCTAGCTACAACGA TTTGGAAG	4579
2144	CAAAACGA A CAAGGACA	1776	TGTCCTTG GGCTAGCTACAACGA TCGTTTTG	4580
2150	GAACAAGG A CACCAGCA	1777	TGCTGGTG GGCTAGCTACAACGA CCTTGTTC	4581
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2160	ACCAGCAA A UUCCCCAG	1778	CTGGGGAA GGCTAGCTACAACGA TTGCTGGT	4582
2189	UUAUGCAA A UAUUCGCC	1779	GGCGAATA GGCTAGCTACAACGA TTGCATAA	4583
2212	CCUCCCCA A UUCUCAGG	1780	CCTGAGAA GGCTAGCTACAACGA TGGGGAGG	4584
2239	CAGCCCUG A UUGAAUCA	1781	TGATTCAA GGCTAGCTACAACGA CAGGGCTG	4585
2244	CUGAUUGA A UCAGUGAA	1782	TTCACTGA GGCTAGCTACAACGA TCAATCAG	4586
2252	AUCAGUGA A UGGAAAAA	1783	TTTTTCCA GGCTAGCTACAACGA TCACTGAT	4587
2260	AUGGAAAA A CAGUUACC	1784	GGTAACTG GGCTAGCTACAACGA TTTTCCAT	4588
2274	ACCUUGGA A CUACUGGA	1785	TCCAGTAG GGCTAGCTACAACGA TCCAAGGT	4589
2282	ACUACUGG A UAAUGGAG	1786	CTCCATTA GGCTAGCTACAACGA CCAGTAGT	4590
2285	ACUGGAUA A UGGAGCAG	1787	CTGCTCCA GGCTAGCTACAACGA TATCCAGT	4591
2300	AGGUGCUG A UGCUACUA	1788	TAGTAGCA GGCTAGCTACAACGA CAGCACCT	4592
2312	UACUAAGG A UGACGGUG	1789	CACCGTCA GGCTAGCTACAACGA CCTTAGTA	4593
2315	UAAGGAUG A CGGUGUCU	1790	AGACACCG GGCTAGCTACAACGA CATCCTTA	4594
2341	AUUUCACA A CUUAUGAC	1791	GTCATAAG GGCTAGCTACAACGA TGTGAAAT	4595
2348	AACUUAUG A CACGAAUG	1792	CATTCGTG GGCTAGCTACAACGA CATAAGTT	4596
2354	UGACACGA A UGGUAGAU	1793	ATCTACCA GGCTAGCTACAACGA TCGTGTCA	4597
2361	AAUGGUAG A UACAGUGU	1794	ACACTGTA GGCTAGCTACAACGA CTACCATT	4598
2396	AGGAGUUA A CGCAGCCA	1795	TGGCTGCG GGCTAGCTACAACGA TAACTCCT	
2406	GCAGCCAG A CGGAGAGU	1796	ACTCTCCG GGCTAGCTACAACGA CTGGCTGC	4599 4600
2416	GGAGAGUG A UACCCCAG	1797	CTGGGGTA GGCTAGCTACAACGA CACTCTCC	
2455	CUGGCUGG A UUGAGAAU	1798		4601
2462	GAUUGAGA A UGAUGAAA	1799	ATTCTCAA GGCTAGCTACAACGA CCAGCCAG	4602
2465	UGAGAAUG A UGAAAUAC	1800	TTTCATCA GGCTAGCTACAACGA TCTCAATC	4603
2470	AUGAUGAA A UACAAUGG		GTATTTCA GGCTAGCTACAACGA CATTCTCA	4604
2475		1801	CCATTGTA GGCTAGCTACAACGA TTCATCAT	4605
	GAAAUACA A UGGAAUCC	1802	GGATTCCA GGCTAGCTACAACGA TGTATTTC	4606
2480	ACAAUGGA A UCCACCAA	1803	TTGGTGGA GGCTAGCTACAACGA TCCATTGT	4607
2490	CCACCAAG A CCUGAAAU	1804	ATTTCAGG GGCTAGCTACAACGA CTTGGTGG	4608
2497	GACCUGAA A UUAAUAAG	1805	CTTATTAA GGCTAGCTACAACGA TTCAGGTC	4609
2501	UGAAAUUA A UAAGGAUG	1806	CATCCTTA GGCTAGCTACAACGA TAATTTCA	4610
2507	UAAUAAGG A UGAUGUUC	1807	GAACATCA GGCTAGCTACAACGA CCTTATTA	4611
2510	UAAGGAUG A UGUUCAAC	1808	GTTGAACA GGCTAGCTACAACGA CATCCTTA	4612
2517	GAUGUUCA A CACAAGCA	1809	TGCTTGTG GGCTAGCTACAACGA TGAACATC	4613
2542	UCAGCAGA A CAUCCUCG	1810	CGAGGATG GGCTAGCTACAACGA TCTGCTGA	4614
2573	GGCUUCUG A UGUCCCAA	1811	TTGGGACA GGCTAGCTACAACGA CAGAAGCC	4615
2582	UGUCCCAA A UGCUCCCA	1812	TGGGAGCA GGCTAGCTACAACGA TTGGGACA	4616
2597	CAUACCUG A UCUCUUCC	1813	GGAAGAGA GGCTAGCTACAACGA CAGGTATG	4617
2617	CUGGCCAA A UCACCGAC	1814	GTCGGTGA GGCTAGCTACAACGA TTGGCCAG	4618
2624	AAUCACCG A CCUGAAGG	1815	CCTTCAGG GGCTAGCTACAACGA CGGTGATT	4619
2638	AGGCGGAA A UUCACGGG	1816	CCCGTGAA GGCTAGCTACAACGA TTCCGCCT	4620
2660	UCUCAUUA A UCUGACUU	1817	AAGTCAGA GGCTAGCTACAACGA TAATGAGA	4621
2665	UUAAUCUG A CUUGGACA	1818	TGTCCAAG GGCTAGCTACAACGA CAGATTAA	4622
2671	UGACUUGG A CAGCUCCU	1819	AGGAGCTG GGCTAGCTACAACGA CCAAGTCA	4623
2684	UCCUGGGG A UGAUUAUG	1820	CATAATCA GGCTAGCTACAACGA CCCCAGGA	4624
2687	UGGGGAUG A UUAUGACC	1821	GGTCATAA GGCTAGCTACAACGA CATCCCCA	4625
2693	UGAUUAUG A CCAUGGAA	1822	TTCCATGG GGCTAGCTACAACGA CATAATCA	4626
2701	ACCAUGGA A CAGCUCAC	1823	GTGAGCTG GGCTAGCTACAACGA TCCATGGT	4627
2725	UCAUUCGA A UAAGUACA	1824	TGTACTTA GGCTAGCTACAACGA TCGAATGA	4628
2744	UAUUCUUG A UCUCAGAG	1825	CTCTGAGA GGCTAGCTACAACGA CAAGAATA	4629
2753	UCUCAGAG A CAAGUUCA	1826	TGAACTTG GGCTAGCTACAACGA CTCTGAGA	4630
2762	CAAGUUCA A UGAAUCUC	1827	GAGATTCA GGCTAGCTACAACGA TGAACTTG	4631
2766	UUCAAUGA A UCUCUUCA	1828	TGAAGAGA GGCTAGCTACAACGA TCATTGAA	4632
2780	UCAAGUGA A UACUACUG	1829	CAGTAGTA GGCTAGCTACAACGA TCACTTGA	4633
2810	GGAAGCCA A CUCUGAGG	1830		4634
2835	UUGUUUAA A CCAGAAAA	1831	TTTTCTGG GGCTAGCTACAACGA TTAAACAA	4635
2843	ACCAGAAA A CAUUACUU	1832	AAGTAATG GGCTAGCTACAACGA TTTCTGGT	4636
2858	UUUUGAAA A UGGCACAG	1833	CTGTGCCA GGCTAGCTACAACGA TTTCAAAA	4637
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2867	UGGCACAG A UCUUUUCA	1834	TGAAAAGA GGCTAGCTACAACGA CTGTGCCA	4638
2894	GGCUGUUG A UAAGGUCG	1835	CGACCTTA GGCTAGCTACAACGA CAACAGCC	4639
2903	UAAGGUCG A UCUGAAAU	1836	ATTTCAGA GGCTAGCTACAACGA CGACCTTA	4640
2910	GAUCUGAA A UCAGAAAU	1837	ATTTCTGA GGCTAGCTACAACGA TTCAGATC	4641
2917	AAUCAGAA A UAUCCAAC	1838	GTTGGATA GGCTAGCTACAACGA TTCTGATT	4642
2924	AAUAUCCA A CAUUGCAC	1839	GTGCAATG GGCTAGCTACAACGA TGGATATT	4643
2959	CUCCACAG A CUCCGCCA	1840	TGGCGGAG GGCTAGCTACAACGA CTGTGGAG	4644
2971	CGCCAGAG A CACCUAGU	1841	ACTAGGTG GGCTAGCTACAACGA CTCTGGCG	4645
2984	UAGUCCUG A UGAAACGU	1842	ACGTTTCA GGCTAGCTACAACGA CAGGACTA	4646
2989	CUGAUGAA A CGUCUGCU	1843	AGCAGACG GGCTAGCTACAACGA TTCATCAG	4647
3008	UUGUCCUA A UAUUCAUA	1844	TATGAATA GGCTAGCTACAACGA TAGGACAA	4648
3020	UCAUAUCA A CAGCACCA	1845	TGGTGCTG GGCTAGCTACAACGA TGATATGA	4649
3052	UUUUAAAA A UUAUGUGG	1846	CCACATAA GGCTAGCTACAACGA TTTTAAAA	4650
3067	GGAAGUGG A UAGGAGAA	1847	TTCTCCTA GGCTAGCTACAACGA CCACTTCC	4651
3075	AUAGGAGA A CUGCAGCU	1848	AGCTGCAG GGCTAGCTACAACGA TCTCCTAT	4652
3088	AGCUGUCA A UAGCCUAG	1849	CTAGGCTA GGCTAGCTACAACGA TGACAGCT	4653
3103	AGGGCUGA A UUUUUGUC	1850	GACAAAAA GGCTAGCTACAACGA TCAGCCCT	4654
3114	UUUGUCAG A UAAAUAAA	1851	TTTATTTA GGCTAGCTACAACGA CTGACAAA	4655
3118	UCAGAUAA A UAAAAUAA	1852	TTATTTTA GGCTAGCTACAACGA TTATCTGA	4656
3123	UAAAUAAA A UAAAUCAU	1853	ATGATTTA GGCTAGCTACAACGA TTTATTTA	4657
3127	UAAAAUAA A UCAUUCAU	1854	ATGAATGA GGCTAGCTACAACGA TTATTTTA	4658
3146	UUUUUUUG A UUAUAAAA	1855	TTTTATAA GGCTAGCTACAACGA CAAAAAAA	4659
3154	AUUAUAAA A UUUUCUAA	1856	TTAGAAAA GGCTAGCTACAACGA TTTATAAT	4660
3164	UUUCUAAA A UGUAUUUU	1857	AAAATACA GGCTAGCTACAACGA TTTAGAAA	4661
3175	UAUUUUAG A CUUCCUGU	1858	ACAGGAAG GGCTAGCTACAACGA CTAAAATA	4662
3265	UAUUUUAG A CUUCCUGU	1858	ACAGGAAG GGCTAGCTACAACGA CTAAAATA	4662
3192	AGGGGGCG A UAUACUAA	1859	TTAGTATA GGCTAGCTACAACGA CGCCCCCT	4663
3245	AGGGGGCG A UAUACUAA	1859	TTAGTATA GGCTAGCTACAACGA CGCCCCCT	4663
3201	UAUACUAA A UGUAUAUA	1860	TATATACA GGCTAGCTACAACGA TTAGTATA	4664
3225	UAUACUAA A UGUAUUCC	1861	GGAATACA GGCTAGCTACAACGA TTAGTATA	4665
3254	UAUACUAA A UGUAUUUU	1862	AAAATACA GGCTAGCTACAACGA TTAGTATA	4666
3282	AGGGGGCG A UAAAAUAA	1863	TTATTTTA GGCTAGCTACAACGA CGCCCCCT	4667
3287	GCGAUAAA A UAAAAUGC	1864	GCATTTTA GGCTAGCTACAACGA TTTATCGC	4668
3292	AAAAUAAA A UGCUAAAC	1865	GTTTAGCA GGCTAGCTACAACGA TTTATTTT	4669
3299	AAUGCUAA A CAACUGGG	1866	CCCAGTTG GGCTAGCTACAACGA TTAGCATT	4670
3302	GCUAAACA A CUGGGUAA	1867	TTACCCAG GGCTAGCTACAACGA TGTTTAGC	4671

Input Sequence = NM_001285. Cut Site = R/Y
Arm Length = 8. Core Sequence = GGCTAGCTACAACGA
NM_001285 (Homo sapiens chloride channel, calcium activated, 1 (CLCA1) mRNA, 3311 bp)

249.021

Table VIII: Human CLCA1 Amberzyme and Target Sequence

Pos	Substrate	Sed	Amberzyme	N N
,		a		Seq
		No.		A
, , ,				No.
40	AUAUAAUU G AAUAUUUU	1211	AAAAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAUUAUAU	J 4672
67	GGGAGCAU G AAGAGGUG	1212	CACCUCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGCUCCC	2 4673
7.8	GAGGUGUU G AGGUUAUG	1213	CAUAACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AACACCUC	C 4674
106	GCACAGCU G AAGGCAGA	1214	UCUGCCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGCUGUGC	3 4675
134	ACAAGUAC G CAAUUUGA	1215	UCAAAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GUACUUGU	U 4676
141	CGCAAUUU G AGACUAAG	1216	CUUAGUCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAAUUGCG	3 4677
172	CUCCUAUU G AAGACAAG	1217	CUUGUCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAUAGGAG	3 4678
223	AGACCUGU G AUAAACCA	1218	UGGUUUAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG ACAGGUCU	U 4679
237	CCACUUCC G AUAAGUUG	1219	CAACUUAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GGAAGUGG	3 4680
312	CGUAACCC G CAUUUUCC	1220	GGAAAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GGGUUACG	3 4681
384	UUCAUCUU G AUUCUUCA	1221	UGAAGAAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAGAUGAA	A 4682
411	GGGCCCU G AGUAAUUC	1222	GAAUUACU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGGGCCCC	C 4683
432	AUUCAGCU G AACAACAA	1223	UUGUUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGCUGAAU	U 4684
448	AUGGCUAU G AAGGCAUU	1224	AAUGCCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUAGCCAU	U 4685
463	UUGUCGUU G CAAUCGAC	1225	GUCGAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AACGACAA	A 4686
469	UUGCAAUC G ACCCCAAU	1226	AUUGGGGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GAUUGCAA	A 4687
480	CCCAAUGU G CCAGAAGA	1227	UCUUCUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG ACAUUGGG	3 4688
490	CAGAAGAU G AAACACUC	1228	GAGUGUTU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUCUUCUG	3 4689
522	GACAUGGU G ACCCAGGC	1229	GCCUGGGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG ACCAUGUC	C 4690
547	AUCUGUUU G AAGCUACA	1230	UGUAGCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAACAGAU	U 4691
563	AGGAAAGC G AUUUUAUU	1231	AAUAAAAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GCUUUCCU	U 4692
583	AAAAUGUU G CCAUUUUG	1232	CAAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AACAUUUU	U 4693
591	GCCAUUUU G AUUCCUGA	1233	UCAGGAAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAAUGGC	C 4694
598	UGAUUCCU G AAACAUGG	1234	CCAUGUUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGGAAUCA	A 4695
619	CAAAGGCU G ACUAUGUG	1235	CACAUAGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGCCUUUG	3 4696
627	GACUAUGU G AGACCAAA	1236	UUUGGUCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG ACAUAGUC	C 4697
640	CAAAACUU G AGACCUAC	1237	GUAGGUCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAGUUUUG	3 4698
655	ACAAAAU G CUGAUGUU	1238	AACAUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUUUUUGU	U 4699

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658	AAAAUGCU G AUGUUCUG	1239	CAGAACAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGCAUUUU	4700
029	UUCUGGUU G CUGAGUCU	1240	AGACUCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AACCAGAA	4701
673	UGGUUGCU G AGUCUACU	1241	AGUAGACU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGCAACCA	4702
694	CAGGUAAU G AUGAACCC	1242	GGGUUCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AUI	AUUACCUG	4703
697	GUAAUGAU G AACCCUAC	1243	GUAGGGUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUCAUUAC	4704
709	CCUACACU G AGCAGAUG	1244	CAUCUGCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGUGUAGG	4705
739	AGAAGGGU G AAAGGAUC	1245	GAUCCUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACCCUUCU	4706
760	UCACUCCU G AUUUCAUU	1246	AAUGAAAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGGAGUGA	4707
769	AUUUCAUU G CAGGAAAA	1247	UUUUCCUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AAI	AAUGAAAU	4708
787	AGUUAGCU G AAUAUGGA	1248	UCCAUAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGCUAACU	4709
820	UUGUCCAU G AGUGGCU	1249	AGCCCACU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUGGACAA	4710
836	UCAUCUAC G AUGGGAG	1250	CUCCCCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ucceee en	GUAGAUGA	4711
850	GAGUAUUU G ACGAGUAC	1251	GUACUCGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AAI	AAAUACUC	4712
853	UAUUUGAC G AGUACAAU	1252	AUUGUACU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG GU	GUCAAAUA	4713
865	ACAAUAAU G AUGAGAAA	1253	UUUCUCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUAUUGU	4714
898	AUAAUGAU G AGAAAUUC	1254	GAAUUUCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUCAUUAU	4715
980	CAAAAGAU G CACAUUCA	1255	UGAAUGUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUCUUUUG	4716
1009	GACUCUAU G AAAAAGGA	1256	UCCUUUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUAGAGUC	4717
1021	AAGGAUGU G AGUUUGUU	1257	AACAAACU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACAUCCUU	4718
1040	CCAAUCCC G CCAGACGG	1258	cceucuee eea	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ರದ್ವಡಡ	GGGAUUGG	4719
1069	UAAUGUUU G CACAACAU	1259	AUGUUGUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AAACAUUA	4720
1081	AACAUGUU G AUUCUAUA	1260	UAUAGAAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AACAUGUU	4721
1093	CUAUAGUU G AAUUCUGU	1261	ACAGAAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AACUAUAG	4722
1151	UCAAAAAU G CAAUCUCC	1262	GGAGAUUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AUI	AUUUUUGA	4723
1160	CAAUCUCC G AAGCACAU	1263	AUGUGCUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	GGAGAUUG	4724
1176	UGGGAAGU G AUCCGUGA	1264	UCACGGAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	ACUUCCCA	4725
1183	UGAUCCGU G AUUCUGAG	1265	CUCAGAAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACGGAUCA	4726
1189	GUGAUUCU G AGGACUUU	1266	AAAGUCCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGAAUCAC	4727
1215	ACUCCUAU G ACAACACA	1267	UGUGUUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUAGGAGU	4728
1248	UUCUCAUU G CUGCAGAU	1268	AUCUGCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AAUGAGAA	4729
1251	UCAUUGCU G CAGAUUGG	1269	CCAAUCUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGCAAUGA	4730
1285	UAGUCCUU G ACAAAUCU	1270	AGAUUUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAGGACUA	4731
1305	AGCAUGGC G ACUGGUAA	1271	UVACCAGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ucceee ec	GCCAUGCU	4732

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_	UGGUAACC G CCUCAAUC	1272	GAUUGAGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	GGUUACCA	4733
	CCUCAAUC G ACUGAAUC	1273	GAUUCAGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	GAUUGAGG	4734
	AAUCGACU G AAUCAAGC	1274	GCUUGAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AGUCGAUU	4735
	CUUUUCCU G CUGCAGAC	1275	GUCUGCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AGGAAAAG	4736
	UUCCUGCU G CAGACAGU	1276	ACUGUCUG GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC UCCGGG	1	AGCAGGAA	4737
	AGACAGUU G AGCUGGGG	1277	CCCCAGCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AACUGUCU	4738
	GGGAUGGU G ACAUUUGA	1278	UCAAAUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	ACCAUCCC	4739
	UGACAUUU G ACAGUGCU	1279	AGCACUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AAAUGUCA	4740
1	UUGACAGU G CUGCCCAU	1280	AUGGGCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	ACUGUCAA	4741
1	ACAGUGCU G CCCAUGUA	1281	UACAUGGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGCACUGU	4742
	UACAAAGU G AACUCAUA	1282	UAUGAGUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	ACUUUGUA	4743
	GUGGCAGU G ACAGGGAC	1283	GUCCCUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	ACUGCCAC	4744
	ACACACUC G CCAAAAGA	1284	UCUUUUGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG G	GAGUGUGU	4745
	GAUUACCU G CAGCAGCU	1285	AGCUGCUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGGUAAUC	4746
	GUCCAUCU G CAGCGGGC	1286	RES ENDEDDODE	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGAUGGAC	4747
1	CGGGCUUC G AUCGGCAU	1287	AUGCCGAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	GAAGCCCG	4748
1	UUUACUGU G AUUAGGAA	1288	UUCCUAAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	ACAGUAAA	4749
f l	AUCCAACU G AUGGAUCU	1289	AGAUCCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AGUUGGAU	4750
	AUGGAUCU G AAAUUGUG	1290	CACAAUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGAUCCAU	4751
1	GAAAUUGU G CUGCUGAC	1291	GUCAGCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	ACAAUUUC	4752
	AUUGUGCU G CUGACGGA	1292	UCCGUCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AGCACAAU	4753
	GUGCUGCU G ACGGAUGG	1293	CCAUCCGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AGCAGCAC	4754
	AAGUGGGU G CUUUAACG	1294	CGUUAAAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	ACCCACUU	4755
	GCUUUAAC G AGGUCAAA	1295	UUUGACCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	GUUAAAGC	4756
1	AAAGUGGU G CCAUCAUC	1296	GAUGAUGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	ACCACUUU	4757
1	ACACAGUC G CUUUGGGG	1297	CCCCAAAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG G	GACUGUGU	4758
	GGCCCUCU G CAGCUCAA	1298	UUGAGCUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AGAGGGCC	4759
- 1	UCCAAAAU G ACAGGAGG	1299	CCUCCUGU GGA		GCCGUUAGGC UCCCUUCAAGGA	gccgunyggc	ncceee	AUUUUGGA	4760
- 1	AGACAUAU G CUUCAGAU	1300	AUCUGAAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUAUGUCU	4761
- 1	GCCUCAUU G AUGCUUUU	1301	AAAAGCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AAUGAGGC	4762
	UCAUUGAU G CUUUUGGG	1302	CCCAAAAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG A	AUCAAUGA	4763
	CUCUCAGO G CUCCAUCO	1303	GGAUGGAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ರಾದ್ಯತ್ತು ಆ	GCUGAGAG	4764
	UCCAGCUU G AGAGUAAG	1304	CUUACUCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC UCCGGG		AAGCUGGA	4765
								1	

1857	CAGUGGAU G AAUGGCAC	1305	GUGCCAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AUCCACUG	4766
1869	GGCACAGU G AUCGUGGA	1306	UCCACGAU GGA	. GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	ACUGUGCC	4767
1923	UGGACAAC G CAGCCUCC	1307	GGAGGCUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GUUGUCCA	4768
2026	CAGGCAUU G CUAAGGUU	1308	AACCUUAG GGA	. GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AAUGCCUG	4769
2055	UACAGUCU G CAAGCAAG	1309	CUUGCUUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 7	AGACUGUA	4770
2076	CAAACCUU G ACCCUGAC	1310	GUCAGGGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AAGGUUUG	4771
2082	UUGACCCU G ACUGUCAC	1311	GUGACAGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AGGGUCAA	4772
2098	CGUCCCGU G CGUCCAAU	1312	AUUGGACG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	ACGGGACG	4773
2107	CGUCCAAU G CUACCCUG	1313	CAGGGUAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AUUGGACG	4774
2115	GCUACCCU G CCUCCAAU	1314	AUUGGAGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGGGUAGC	4775
2130	AUUACAGU G ACUUCCAA	1315	UUGGAAGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	ACUGUAAU	4776
2142	UCCAAAAC G AACAAGGA	1316	UCCUUGUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GUUUUGGA	4777
2185	UAGUUUAU G CAAAUAUU	1317	AAUAUUUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AUAAACUA	4778
2195	AAAUAUUC G CCAAGGAG	1318	CUCCUUGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (UCCGGG GAAUAUUU	4779
2238	ACAGCCCU G AUUGAAUC	1319	GAUUCAAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGGGCUGU	4780
2242	CCCUGAUU G AAUCAGUG	1320	CACUGAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AAUCAGGG	4781
2250	GAAUCAGU G AAUGGAAA	1321	UUUCCAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 7	ACUGAUUC	4782
2296	GAGCAGGU G CUGAUGCU	1322	AGCAUCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 7	ACCUGCUC	4783
2299	CAGGUGCU G AUGCUACU	1323	AGUAGCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AGCACCUG	4784
2302	GUGCUGAU G CUACUAAG	1324	CUUAGUAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AUCAGCAC	4785
2314	CUAAGGAU G ACGGUGUC	1325	GACACCGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AUCCUUAG	4786
2347	CAACUUAU G ACACGAAU	1326	AUUCGUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 7	AUAAGUUG	4787
2352	UAUGACAC G AAUGGUAG	1327	CUACCAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GUGUCAUA	4788
2376	GUAAAAGU G CGGGCUCU	1328	AGAGCCCG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	uccege 1	ACUUUUAC	4789
2398	GAGUUAAC G CAGCCAGA	1329	UCUGGCUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GUUAACUC	4790
2415	CGGAGAGU G AUACCCCA	1330	UGGGGUAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 7	ACUCUCCG	4791
2458	GCUGGAUU G AGAAUGAU	1331	AUCAUUCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AAUCCAGC	4792
2464	UUGAGAAU G AUGAAAUA	1332	UAUUUCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUCUCAA	4793
2467	AGAAUGAU G AAAUACAA	1333	UUGUAUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	AUCAUUCU	4794
2494	CAAGACCU G AAAUUAAU	1334	AUUAAUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 7	AGGUCUUG	4795
2509	AUAAGGAU G AUGUUCAA	1335	UUGAACAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ncceee 1	AUCCUUAU	4796
2572	UGGCUUCU G AUGUCCCA	1336	UGGGACAU GGA	GCCGUUAGGC	GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AGAAGCCA	4797
2584	UCCCAAAU G CUCCCAUA	1337	UAUGGGAG GGA	GCCGUUAGGC	GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUUGGGA	4798

UCCGGG GGUGAUUU 4	V 110001100V	サー Oりりつつりりみ	AGAUUAAU 4	AGAUUAAU 4 AUCCCCAG 4	AGAUUAAU 4 AUCCCCAG 4 AUAAUCAU 4	AGAUUAAU 4 AUCCCCAG 4 AUAAUCAU 4 GAAUGAUA 4	AGAUUAAU 4 AUCCCCAG 4 AUAAUCAU 4 GAAUGAUA 4 AAGAAUAA 4	AGAUUAAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAACU	AGAUUAAU 4 AUCCCCAG 4 AUAAUCAU 4 GAAUGAUA 4 AAGAAUAC 4 AUGAACU 4 AUUGAACU 4	AGGAUUAAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAACU ACUUGAAG	AGAUUGAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAACU ACUUGAAG AGAGUAU AGAGUAU	AGAGUGAU AGAUUAAU AUAAUCAU GAAUGAUA AGAAUAC AUUGAACU ACUUGAAG AGUAGUAU AGUAGUAU AGAGUAGUA	AGAGUGAU AGAUGAU AUCCCCAG AUAAUGAU AAGAAUAC AUUGAACU ACUUGAAG AGUAGUAU AGAGUUGG AGAAGUAA	AGAGUNAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAACU ACUUGAAG AGUGAAG AGAGUUGG AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA	AGAGUNAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAACU ACUUGAAC AUGAACU ACUUGAAG AAAAGUAU AGAGUUGG AAAAGUAA AAAAGUAA AAAAGUAA	AGAUUAAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAACU ACUUGAAG AGAGUUGG AAAAGUAA AAUGAAAA AAUGAAAA AAUGAAAA	AGAUUAAU AUCCCCAG AUAAUCAU GAAUGAUA AAGAAUAC AUUGAAC AUUGAAC ACUUGAAG ACUUGAAG ACUUGAAG ACUUGAAG ACUUGAAG ACUUGAAG ACUUGAAG ACUUGAAG AAAGUAA AAAGUAA AAAGUAA AAAGUAA AAAGUAA AAAGUAA AAAGUAA AAAAGUAA AAAGUAA AAAGUAAA AAAGUAAA AAAAGUAA	AGAUUAAU AUCCCCAG AUAAUCAU GAAUGAAUAC AUUGAACU ACUUGAAG AGAGUUGG AAAAGUAA AAAAGUAA AAAAGUAA AAACAGCCU AAAGAAAA AACAGCCU AAAGAAAA AACAGCCU AAACAGCCU AAACAGCCU	AGAUUGG AUGAAUGAU AUGAAUGAU AUGAAUGA AUGAAUG AGAGUUGG AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA	AGAUUAAU AUCCCCAG AUAAUCAU GAAUGAUA AUGAACU ACUUGAAG AGAGUUGG AAAAGUAA	AGAUUAAU AUCCCCAG AUAAUCAU GAAUGAUA AUGAACU ACUUGAAG AGAGUUGG AAAAGUAA AAUGAAAA	AGGAGUUGG AGAAUGAUA AUCCCCAG AUAAUCAU AAGAAUAC AUUGAACU ACUUGAACU ACUUGAAG AAAAGUAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGCAAUG GGAGUCUG AAAGUUAC AAUGAAAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGAAAA	AGGACUAG AUCCCCAG AUAAUCAU GAAUGAUA AUUGAACU ACUUGAAG ACUUGAAG AAAGUAA AAAGUAA AACAGCCU GACCUUAU AGAUCGAC AAUGCAAUG GGAGUCGA AACAGCCU	AGGACUAGO AGAUCAN AUCCCCAG AUAAUCAU AGAAGAAUAC AUUGAACU ACUUGAAG AGAGUUGG AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGUAA AAAAGCC AAACAGCC AAACAGCC AAACAGCC AAAAGCC AAACAGCC AAACAGCCC AAACAGCC AAACC AAACAGCC AAACAGCCC AAACAGCCC AAACAGCC AAACAGCC AAACAGCC AAACAGCC AAACAGCCC AAACAGCC AAACAGCC AAACAGCC AAACAGCC AAACAGCC AAACAGCC AAACAGCC AAAC	AGAGUUAU AUCCCCAG AUAAUCAU AUGAACU AUGAACU ACUUGAAC AUUGAAC AUGAACU ACUUGAAC AAAAGUAA AAAAAAAA	AGAUUAU AUCCCCAG AUAAUCAU AUGAAUA AUGAAUA AUGAACU AUUGAAC AUUGAAC AUUGAAC AUUGAAC AUUGAAC AUUGAAC AAUGAAC AAAAGUA AACAGCCU AACAGCCCU AACAGCCU AGGCCCUAC AGGCCCUAC AGGCCCUAC AGGCCCUAC AGGCCCCCC	AGGCCCUAG AUGAAUCAU AUGAAUCAU AUGAAUGAAU ACUUGAAG ACUUGAAG ACUUGAAG ACUUGAAG AAAAAAAAA AAUGAAAA AAUGAAAA AAUGAAAA AAUGCAAUG GGAGUUGG GGAGUUGG AACAGCCU AACAGCCU AACAGCCU AACAGCCU AACAGCCUAG AACAGCCUAG AACAGCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG AGACCCUAG	AGGAGUUAU AUCCCCAG AUAAUCAU GAAUGAUAU ACUUGAACU ACUUGAACU ACUUGAACU ACUUGAACU ACACCCU AACAGCCC AACAGCCC AACAGCCC AACAGCCC AACACCC AACAGCCC AACAGCCC AACAGCCC AACAGCCC AACAGCCC AACAGCCC AACAGCCC AGCCCCCA AACAGCCC AGCCCCCA AACAGCCC AGCCCCCA ACCCCCCA ACCCCCCA ACCCCCCA ACCCCCC	AGGACCUAG AGGACCCAG AUGAAUCAU AGGAAUGA ACUGAAG AACAGCCU AUGAAAA AAUGAAAA AAUGCAAUG GACCUUAU AGGACUAG AACAGCCC AGGCCAUG AACAGCC AGGCCCUAG AGGCCUAG AGGCCUAG AGGCCUAG AGGCCUAG AGCCCUAG AGCCCUAG AGCCCCUAG AGCCCCUAG AGCCCCUAG	AGGACUAG AGGAUGADA AGGAAUGA AUUGAACU ACUUGAAG ACUUGAAG AAAGUAA AACAGCCU AAAAGUAA AACAGCCU AGCCCUUAU AGGCCUUG AGCCCUUG AGCCCUUG AGCCCUUG AGCCCUUG AGCCCUUG AGCCCUUG AGCCCUUG AGCCCCUA AAAAAAAAG AAAAAAAAG AAAAAAAAG AAAAAAAA
	3C UCCGGG AGGUCGGU	UCCGGG		UCCGGG	UCCGGG	UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGGG UCCGGGG </td <td>UCCGGG UCCGGG UCCGGGG UCCGGGG</td> <td>UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG</td> <td>UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG</td> <td>UCCGGG UCCGGG UCCGGGG UCCGGGG</td> <td>UCCGGG UCCGGG UCCGGGG UCCGGGG</td> <td>UCCGGG UCCGGG UCCGGGG UCCGGGG</td> <td>00000000000000000000000000000000000000</td> <td>UCCGGG UCCGGG UCCGGGG UCCGGGG</td> <td>UCCGGG UCCGGG UCCGGGG UCCGGGG</td> <td> DCCGGGG</td> <td>00000000000000000000000000000000000000</td> <td>00000000000000000000000000000000000000</td> <td>0.000 0.000</td> <td>0.000 0.000</td> <td> DCCGGGG</td> <td>0.000 0.000</td>	UCCGGG UCCGGGG UCCGGGG	UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG UCCGGG	UCCGGG UCCGGGG UCCGGGG	UCCGGG UCCGGGG UCCGGGG	UCCGGG UCCGGGG	00000000000000000000000000000000000000	UCCGGG UCCGGGG UCCGGGG	UCCGGG UCCGGGG UCCGGGG	DCCGGGG	00000000000000000000000000000000000000	00000000000000000000000000000000000000	0.000 0.000	0.000 0.000	DCCGGGG	0.000 0.000
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		C UCCCUUCAAGGA	C UCCCUUCAAGGA	C UCCCUUCAAGGA		C UCCCUUCAAGGA								C UCCCUUCAAGGA	c ucccuucaagga c ucccuucaagga	c ucccuuchagga c ucccuuchagga	c ucccuucaagga c ucccuucaagga	GCCGUUAGGC UCCCUUCAAGGA	C UCCCUUCAAGGA	c ucccuuchagga c ucccuuchagga	c ucccuuchagga c ucccuuchagga	c ucccuucaagga c ucccuucaagga	GCCGUUAGGC UCCCUUCAAGGA	C UCCCUUCAAGGA	c ucccuuchagga c ucccuuchagga	c ucccuuchagga c ucccuuchagga	C UCCCUUCAAGGA	C UCCCUUCAAGGA	C UCCCUUCAAGGA	C UCCCUUCAAGGA
000	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	2 2 2 1	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC CCGUUAGGC	GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC	GCCGUUAGGC GCCGUUAGGC
	GGA	GGA	GGA	GGA		GGA	GGA	GGA GGA GGA	GGA GGA GGA	GGA GGA GGA GGA	GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA GGA GGA GGA GGA GGA GGA GGA GGA GGA	GGA	GGA	GGA	GGA	GGA	GGA	GGA	GGA	GGA
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AAGAGUUAU G UUCAAGCAU 1370 AUGGUUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAUAUCU AAGAGUUU G UUAUCAUU 1371 AAUGAUAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAUAUCU GAAAACGU G UGUCUAUA 1372 GUUAUAGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGAUAUCU GAAACGUU G UUCAUCAUU 1373 HAUAUAGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGAUAUCA AAGAGUUCU G UUCAUCAUU 1374 AAUAUAGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGAUAUCA AAGAGUUCU G UUCAUCAUU 1375 UUCCUGUAGACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGACUUCC AAGAGUUCU G UUCAUCAUU 1376 UUCCUGUAGACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGACUUCC AAGAGUUCU G UUCAUCAUU 1377 AAAAUGAACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGACUUCC AAGAGUUCU G UUCAUCAUU 1378 AAGAGUAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGACUCC AAGAGUUCU G UUCAUCAUU 1381 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGACUCC AAGAGUUCU G UUCAUCAUU 1382 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGACUCC CUGAUAGAC G UUCCAGAU AAGAGUUCU G UUCCUGUU 1381 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUUCC CUGAUCAUU G UUCCCAUU 1382 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUUCC CUGAUCAUC G UUCCCAUU AACAGAACA G UGCCAAU 1381 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUUCCA CUGAUCAUA G UUCCGAUU 1382 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUUCCA CUGACAAAA G UGCACAAA G UGCACAAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUUCCA AACAGAAA G UGCACAAA G UGCACAAAAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUCCCAAAAA G UGCACAAAA G UGCACAAAA G UGCACAAAA G UGCACAAAA G UGCACAAAA G UGCACAAAAGA GCACCUUAGGA GCCGUUAGGC UCCGGG AUGACCAAAAAGAAAAA G UGCACAAAA G UGCACAAAAA G UGCACAAAAA G UGCACAAAAA G UGCACAAAAAGAAAAA G UGCACAAAAAAAAAA	4831	4832	4833	4834	4835	4836	4837	4838	4839	4840	4841	4842	4843	4844	4845	4846	4847	4848	4849	4850	4851	4852	4853	4854	4855	4856	4857	4858	4859	4860	4861	4862	4863
AGGGUINAU G UCAGCAU AAGGGUINAU G UUAUCAUU AAUGAUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAGGRUAUU G UUAUCAUU AAUGAUAU AAUGAUUA G UUAUCAUU AAUGAUAA AAAGGRUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GGAAACGUGU G UGUUAUU AAAGGRUA G UGUUAUU AAAGGRUA GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AAACGUGU G UAUUAUU AAAGGRUA G UACACAA AAAGGRUA G UGAGGAA AAAGGRUC G UAUUCAUU AAAGGRUA G UGAGGAA AAAGGRUC G UAUUCAUU AAAGGRUC G UAUUCAAGA AAAGAAGA AAAGAAGA AAAGAAGA AAAGAAG	-	1	SUCCUOU	SUUUCC		NAUGA	מכככת	ACUCU	GAACU	JGCCUU	JGGGGU	AGAUGC	NUACAG	JUUUGA	AGUCAG	AGCAU	MGCCC	AUGCCU	SUUACU	JUGUAC	וחכטנו	ານອວວນ	ເດດການ	CUCAC		ungne						AGUAAAUG	בעטוווועע
GARGUIAU G UCAAGCAU 1370 AUGCUUGA GGA GCCGUUAGGC UCCCUUCAAGGA AAGAUAUU G UUAUCAUU 1371 AAUGAUAA GGA GCCGUUAGGC UCCCUUCAAGGA AAAGAUAUU G UUAUCAUU 1372 GUUUAUCA GGA GCCGUUAGGC UCCCUUCAAGGA AAACGUUG G UGUUAUU 1373 UAUAGACA GGA GCCGUUAGGC UCCCUUCAAGGA UCAUAUCU G UGUUAUU 1374 AAUAUAGA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGGUUG G UGUUAUU 1376 UUGUUAUUA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGGUUG G UGUUAUUA 1376 UUGUUAUUA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGGUUG G UGUUCUU 1377 GAUGAACA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGGUUU G UUCAUCUU 1381 AACCAGAA GGA GCGGUUAGGC UCCCUUCAAGGA ACCCCAAU G UCGUUGCA 1382 GCUUCAGA GGA GCGGUUAGGC UCCCUUCAAGGA ACCCCAAU G UCGUUGCA 1382 GCUUCAGA GGA GCGGUUAGGC UCCCUUCAAGGA ACCCCAAU G UUCCGAA 1383 AAUGGCAAU GCCCUUCAAGGA ACCCCAAU G UUCCGAA 1384 UGGUCUCA GCCCUUAGGC UCCCUUCAAGGA AGACCAAU G UUCGGGA 1384 UGGUCUCA GCCCUUAGGC UCCCUUCAAGGA AGGCAUUU G UGAGAGAG	- 1		1	l			1	1		1		l	1 ;			i	l															UCCGGG AGI	
GAGGUUAU G UCAAGCAU 1370 AUGCUUGA GGA GCCGUUAGGC UCCCUUCAAGGA AAGAUAUU G UUAUCAUU 1371 AAUGAUAA GGA GCCGUUAGGC UCCCUUCAAGGA AAAGAUAUU G UUAUCAUU 1372 GUUUAUCA GGA GCCGUUAGGC UCCCUUCAAGGA AAACGUUG G UGUUAUU 1374 AAUAUUAGA GGA GCCGUUAGGC UCCCUUCAAGGA AAACGUUG G UGUUAUU 1376 UUAUAUAUA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGUUCU G UUUAUAUU 1376 UUGUUGAA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGUUCU G UUUAUCUU 1377 GAUGAACA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGUUCU G UUCAUCUU 1378 AAGAUGAA GGA GCCGUUAGGC UCCCUUCAAGGA AGAGCUUU G UUCAUCUU 1381 AACACAGA GGA GCCGUUAGGC UCCCUUCAAGGA ACCCCAAU G UUCUCGU 1382 GCUUCAGAA GGA GCCGUUAGGC UCCCUUCAAGGA ACCCCAAU G UUCUCGU 1381 AACAGAUA GGA GCCGUUAGGC UCCCUUCAAAGGA ACCCCAAU G UUCUGGUU 1383 AAUGGCAAU GCCCUUCAAGGA CUGACUCUC G UUCUCGUA 1384 UGGUCUCA GCCCUUCAAGGA CUGACUAA 1384 UGGUCUCA GCCCUUAGGC UCCCUUCAAGGA CUGACUAA G UGCAGUAGGA GCCCUUAGGA <				JUAGGC UC			1	1	JUAGGC UC					JUAGGC UC					JUAGGC UC	JUAGGC UC				JUAGGC UC								GCCGUUAGGC UC	
GAGGUUAU G UCAAGCAU 1370 AUGCUUGA GGA AAGAUAUU G UUAUCAUU 1371 AAUGAUAA GGA AAAGAUAUU G UUAUCAUU 1372 AAUGAUAA GGA GGAAACCU G UGAUAAUU 1373 UAUAUAUCA GGA AAACGUCU G UGUCUAUA 1374 AAUAUAGA GGA AAACGUCU G UGUCUAUAU 1375 UAUAUAUA GGA AGGGAGAU G UGUCAUCU 1377 GAUGACUA GGA AGGGAGAU G UCAUGCA 1377 GAUGACACA GGA AGGGAGAU G UCAUGCA 1380 UCCUCGAGA ACCCCAAU G UGCCAGAA 1381 AACAGAUA GGA ACCCCAAU G UGCCAGUU 1383 AAUGGCAA GGA CUGAACUU G UUGAAGC 1382 ACUCCAA GGA CUGACUAU G UGAGAGA 1385 ACCCAGAA GGA AUGCUGAU G UCAGGAGA 1385 ACCCAGAA GGA AGGCAUUU G UCCAUGAG 1380 CUCUCCAA GGA AGGCAAUU G UCAGGAGA 1389 CUCACUGAA GGA AGGCAAUU G UCAGGAGG 1380 CUCACUGAA GGA AGGCAACUU G UCAGGAGG 1380 CUCACUGAA GGA AAAGAAAGU G UCAGGAGG 1390 CUCACUGAG GGA		ł								ı		ļ.				1	l									i I						ļ	じししむ マシャ
GAGGUUAU G UCAAGCAU 1370 AUGCUUGA GGA AAAGAUAUU G UUAUCAUU 1371 AAUGAUAA GGA AAAGACCU G UGAUAAAC 1372 AAUGAUAA GGA GAAAGCCU G UGAUAAAC 1373 UAUAGACA GGA AAACGUU G UGUCAAUA 1374 AAUGAUAGA GGA AAACGUUCU G UGUCAAUA 1375 UAUAUAUA GGA AGGGAGAU G UGUCAGAA 1376 UUCAUGACA GGA AGGGAGAU G UCAUGACA 1377 GAUGACACA GGA AGGGACAU G UCAUGACA 1379 UCCAACGA GGA AGGCAUUU G UCCAGGAA 1381 AACAGAUA GGA ACCCCAAU G UGCCAUU 1383 AAUGGCAA GGA CUGAACUAU G UCCCAGGA 1384 UCCUCCAA GGA CUGACUAU G UCCCAGUA 1385 AACCAGAA GGA CUGACUAU G UCCCAGUA 1385 AACCAGAA GGA AGGCCAAUU G UCCAGGAG 1386 CUCUCCCA GGA AGGCCAAUU G UCCAGGAG 1380 CUCCCUGA GGA AGGCCAAUU G UCAGGAGG 1380 CUCCCUGA GGA AGGCCAAUU G UCAGGAGG 1380 CUCCCUGA GGA AAAGAAAU G UCAGGAGG 1391 UGCUCAAA GGA	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	cccoucaa	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	CCCUUCAAG	CCCUUCAAC	CCCUUCAAC	CCCUUCAAC	UCCCUUCAAGGA	OK KULLIOU							
GAGGUDAU G UCAAGCAU 1370 AUGCUUGA GGA AAAGAUAUU G UUAUCAUU 1371 AAUGAUAA GGA AAAGAUAUU G UUAUCAUU 1372 AAUGAUAA GGA GGAAACCU G UGAUAAAC 1373 UAUAUAUCA GGA AAACGUGU G UCUAUAUU 1374 AAUGAUGA GGA AAACGUGU G UCUAUAUU 1375 UAUAUAUA GGA AGGGAGAU G UCAAGCAA 1376 UUCAUGUG GGA AGGGAGAU G UCAGGAA 1379 UACCUGUA GGA AGGGAGUU G UCAUGGUA 1379 UACCAGAA GGA AGGCAUU G UCAUGGUU 1381 AACGAGAUA GGA ACCCCAAU G UCCCAGAA 1382 ACUCCUCA GGA ACCCCAAU G UCCCAGAU 1383 AAUGGCAA UCAAAAAU G UCCCAGU 1385 AACCAGAA GGA CUGACUAUU G UCCCAGGA 1385 AACCAGAA GGA AGGCCAAUU G UCCAGGAG 1389 CUCUCCCAGGA AGGCCAAUU G UCCAGGAGG 1380 CUCCCUGA GGA AGGCCAAUU G UCCAGAGG 1380 CUCCCUGA GGA AGGCCAAUU G UCCAGGAG 1380 CUCCCUGA GGA AAAGAAAU G UCCAGAAG 1391 UGCCAGAGA	SUVAGGC U	1	1	SUVAGGC U			ŀ		SUVAGGC U			1		SUNAGGC U				SUVAGGC U	SUVAGGC U				SUVAGGC U	SUNAGGC U	SUVAGGC U			SUVAGGC U	SUNAGGC U			GCCGUUAGGC U	11 בבבעודוי
GAGGUUAU G UCAAGCAU 1370 AUGCUUGA AAGAUAUU G UUAUCAUU 1371 AAUGUUACA AAAGACCU G UGAUAAAC 1372 GUUUAUCA GGAAACGU G UGUCUAUA 1373 UAUAGACA AAACGUGU G UCUAUAUU 1373 UAUAUAUA AAACGUGU G UGUCAUCA 1375 UAUAUAUA AGGAGUUC G UAUCAUCUU 1376 UUGCUGUA AGGAGUUC G UACAUCUU 1378 AAGAGUGA AGGAGUUCU G UCCAUGAA 1380 UUCUGGCA AGGUUCUC G UCCAUGAA 1381 AACAGAUA CUGAACUU G UCCACAUU 1382 GCUUCAAA CUGAACUU G UCCACAUU 1382 GCUUCAAA AUGCUGAU G UCCACAGAA 1386 AACCAGAA AUGCUGAU G UCCACAGAA 1386 ACCCCAAA AUGCUGAU G UCCACAGAG 1386 ACUCCUCAA AGGAACUU G UCCACAGAG 1386 CUCCCCCAA AGGCAUUU G UCCACAGAG 1387 CUCCCAGAA AGGCAUUU G UCCACAGAG 1389 CUCCCCCAAA AGGCAGUU G UCCACGAGAG 1390 CUCCCCAGAA AGGCAGUU G UCCACGAGAG		1	į .				1	1	1 .	1		1			1	ı						1 1									i	GGA GCCC	プレンプ マンプ
GAGGUUAU G UCAAGCAU AAGAUAUU G UUAUCAUU AAAGAACGU G UGUUCAUAUA AAACGUGU G UGUUCAUAUA AAGGAGAU G UGUUCAUCAU AGGGAGAU G UACAGCAA AGGGAGAU G UCAUCAUC AGUUCUGU G UUCAUCGUU AAGGCAUU G UCCAUGAA ACCCCAAU G UGCCAGAA AGGCAUUU G UCCAUGAG AGGCAUUU G UCCAUGAG AGGCAUUU G UCCAUGAG AGGCAGUU G UCCACACA AAAGAACA G UACAGCACA CACAACAU G UACACCAA AAAGAAUU G UCCACAACA UCUAUAAU G UUCACCAA AAAGAAUU G UUCACAAAC AAAGAAUU G UUCACAAAC AAAGAAUU G UUCACAAAC AAAGAAUU G UACAGAAC AAAGAAUU G UACAGAAC AAAGAAUUG G UACAGAAC AAAGAAUUG G UACAGAAC AAAGAAUUG G UCUCACAAAGU	- 1	AAUGAUAA	GUUUAUCA					1			l 1	1				1	l									1 1						CCUAAUCA	ないさないさない
AAGAUAUU G AAAGACGU G GGAAACGU G GGAAACGU G AAGGGAGAU G AGGGAGAU G AGGGAGAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G CUGAAAAU G AGGCACU G AGGCACU G AAAGAAU G CACAACAU G CACAACAU G CACAACAU G AAAGAAU G CACAACAU G AAAGAAU G CACAACAU G CACACACAU G CACACACAU G CACACCAU G CACACCAU G CACACCAU G CACACCAU G	1370	1371	1372	1373	1374	37	1376	1377	1378	m	1380	1381	1382	1383	1384	1385	1386	1387	1388	ന	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402
AAGAUAUU G AAAGACGU G GGAAACGU G GGAAACGU G AAGGGAGAU G AGGGAGAU G AGGGAGAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G ACCCCAAU G CUGAAAAU G AGGCACU G AGGCACU G AAAGAAU G CACAACAU G CACAACAU G CACAACAU G AAAGAAU G CACAACAU G AAAGAAU G CACAACAU G CACACACAU G CACACACAU G CACACCAU G CACACCAU G CACACCAU G CACACCAU G	JCAAGCAU	MAUCAUU	IGAUAAAC	IGUCUAUA	ICUAUAUU	IAUAUAUA	IACAGCAA	IGUUCAUC	UCAUCUU	ICGUUGCA	IGCCAGAA	AUCUGUU	TUGAAGC	NGCCAUU	IGAGACCA	സസേദ്യവ	IGGAGAGA	CCAUGAG	UCAGCAG	IAGUAAAG	CAGGGAG	UACACCA	GAGUUUG	UCUCCAA	TURCACA	UGAUUCU	ACAGAAC	GUGUUUA	GUUUAGU	UUAGUCC	ACAAAGU	UGAUUAGG	ט ווטטווטטווט
	ט	ט	ט	ט	ט	ט	ט	ט	ט	ט	ט	ט	ຽ	AAAAAU G U	හ	ט	ט	ט	Ö	ŋ	ß	ט	G	GAGUUU G L	UAUAAU G U	ย	ט	ຕ	O	G	ט	CAUUUACU G U	CITCA A TITLE G 11
86 155 221 221 223 253 253 253 374 478 457 457 457 457 457 457 457 457 457 457	-	2													2		5	Ì		7												1534 CA	1573 CIT

1695	GAGGAGCU G UCCAAAAU	1403	AUUUUGGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGCUCCUC	4864
1795	AUGGAGCU G UCUCUCAG	1404	CUGAGAGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGCUCCAU	4865
1902	GACACUUU G UUUCUUAU	1405	AUAAGAAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAAGUGUC	4866
1978	GUGGCUUU G UAGUGGAC	1406	GUCCACUA GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAAGCCAC	4867
2086	CCCUGACU G UCACGUCC	1407	GGACGUGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGUCAGGG	4868
2227	GGGCCAGU G UCACAGCC	1408	GGCUGUGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACUGGCCC	4869
2320	AUGACGGU G UCUACUCA	1409	UGAGUAGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACCGUCAU	4870
2368	GAUACAGU G UAAAAGUG	1410	CACUUUUA GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACUGUAUC	4871
2439	GGAGCACU G UACAUACC	1411	GGUAUGUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGUGCUCC	4872
2512	AGGAUGAU G UUCAACAC	1412	GUGUUGAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUCAUCCU	4873
2529	AAGCAAGU G UGUUUCAG	1413	CUGAAACA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACUUGCUU	4874
2531	GCAAGUGU G UUUCAGCA	1414	UGCUGAAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACACUUGC	4875
2563	GCUCAUUU G UGGCUUCU	1415	AGAAGCCA GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAAUGAGC	4876
2575	CUUCUGAU G UCCCAAAU	1416	AUTUGGGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUCAGAAG	4877
2829	GUCUUUUU G UUUAAACC	1417	GGUUUAAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAAAAGAC	4878
2890	UUCAGGCU G UUGAUAAG	1418	CUUAUCAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGCCUGAA	4879
2943	GUAUCUUU G UUUAUUCC	1419	GGAAUAAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAAGAUAC	4880
3002	UGCUCCUU G UCCUAAUA	1420	UAUUAGGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAGGAGCA	4881
3057	AAAAUUAU G UGGAAGUG	1421	CACUUCCA GGA	. GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUAAUUUU	4882
3084	CUGCAGCU G UCAAUAGC	1422	GCUAUUGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGCUGCAG	4883
3109	GAAUUUUU G UCAGAUAA	1423	UVAUCUGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAAAAUUC	4884
3166	UCUAAAAU G UAUUUUAG	1424	CUAAAAUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUUUUAGA	4885
3182	GACUUCCU G UAGGGGGC	1425	GCCCCCUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGGAAGUC	4886
3272	GACUUCCU G UAGGGGGC	1425	GCCCCCUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGGAAGUC	4886
3203	UACUAAAU G UAUAUAGU	1426	ACUAUAUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUUUAGUA	4887
3227	UACUAAAU G UAUUCCUG	1427	CAGGAAUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUUUAGUA	4888
3235	GUAUUCCU G UAGGGGGC	1428	GCCCCCUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGGAAUAC	4889
3256	UACUAAAU G UAUUUUAG	1429	CUAAAAUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUUUAGUA	4890
15	UGCUUUUG G UACAAAUG	1430	CAUUUGUA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CA	CAAAAGCA	4891
63	UAAGGGGA G CAUGAAGA	1431	UCUUCAUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ucceee uc	UCCCCUUA	4892
73	AUGAAGAG G UGUUGAGG	1432	CCUCAACA GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	uccese cu	CUCUUCAU	4893
81	GUGUUGAG G UNAUGUCA	1433	UGACAUAA GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CU	CUCAACAC	4894
91	UAUGUCAA G CAUCUGGC	1434	GCCAGAUG GGA		GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	ucceee na	UUGACAUA	4895

GCCGUUAGGC UCCGGG	G CACAGCUG 1435 CAGCUGUG GGA	CAGCUGUG GGA	GGA	1 1	AGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAGAUGCU	
G CAGAUGGA 1437 UCCANUCUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAGACAAN 1438 AUUGCGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAAUAGUA 1439 AUUGCGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAAACAC 1441 GUGUUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGAAACAC 1442 GUCUUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGAAGAA 1443 GUUUCCAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC CUACAAGGA GCCGUUAGGC GCACAUAGGA GCCGUUAGGC UCCCGUUAGGC CCGUUAGGC GCAACAGGA GCCGUUAGGC GCCGUUAGGC GCAC	CUGGCACA	ט	1436	GCCUUCAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UGUGCCAG	4897
UACGCAAU 1438 AUUGCGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAADAGUA 1439 UACUAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UACAAACAC 1441 GCCCCUGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCAGGGG 1141 CCCCCUGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAGAA 1442 CCCCCUGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAGAAA 1443 UUCCUUCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAGAAA 1446 UUCCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UAACCCGC 1447 CCCCAAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGAUAGGC CCCAAUUGGC UUCCUUCA 1448 UUACUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCCUUCA 1448 ACCCACAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCUUCAGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCUUCAGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCUUCAGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAAUUCA 1452 UUCAUUAGG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUACCCAG GCCGUUAGGC UCCCUUCAAGGA GCCGU	AGCUGAAG (3 CAGAUGGA	1437			UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CUUCAGCU	4898
CAAUMAGUA 1439 UACUAUUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCAAGGGGGG 1440 GUGUUUUA, GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAGAC 1442 GUCUUUUA, GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAGAAC 1442 GUCUUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAGAAA 1444 UAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAGAAA 1445 UUUCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAAUGGGG 1446 UUAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAAUGGGG 1447 CCCCCUUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCUUUAA 1448 ACAACAAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCUUGAGG 1450 ACACACAAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUGAAAAGA 1452	AUUUACAA	3 UACGCAAU	1438				GCCGUUAGGC		UUGUAAAU	4899
UVABABCAC 1440 GUGUUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAACAC 1441 CCCCCUGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGAGGGGC 1442 GUUUCUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGAGAACA 1444 UAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAGAAA 1445 UUUCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAACCGC 1446 UUAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAACGG 1447 CCCCAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CCAUUGAG 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CCCAUUGGG 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CCCUUCAGGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGAUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGACAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAGCAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGACAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAAUG GGA GCCGUUAGGC	AGACAAGA	G CAAUAGUA	43				GCCGUUAGGC		ucuugucu	4900
UCAGGGGG 1441 CCCCCUGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG UUGAAGAC 1442 GUCUUUAAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGGAAAC 1443 GUUUUACAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAACAAA 1444 UAAACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAACAAA 1446 GCGGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAAUGGGG 1447 CCCCAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC U	- 1	G UAAAACAC	44				GCCGUUAGGC	UCCGGG	UAUUGCUC	4901
UBGRAACC 1442 GUCUUUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGGAAAC 1443 GUUUCCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGGGUUUA 1444 UAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAGAAA 1445 UUCCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG UAAACCCGC 1446 UUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CAAUUUAA 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CAAUUUAA 1450 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUCAGG CCCUCAGUU 1451 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUCAGG CCCUCAGGU 1450 ACUCAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUCAGG CCCUCAGGU 1451 ACUCAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGA GCCGUUAGGC UCCGGG CAUUCAUCA 1452 UUCAUAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUUCACACA 1454 GCACAAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUUCACACA 1454 GACGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUUCACAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	CACAUCAG		1441			UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CUGAUGUG	4902
UNGGAAAC 1443 GUUUCCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGUGGUUA 1444 UAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAGAAA 1445 UUUCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAAUGGGG 1447 CCCCAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCANUUUAA 1448 UUAAAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCAUUGAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCAUUGAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CCCUGAGU 1450 ACUCAGAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CCCUGAGU 1450 ACUCAGAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CCCUGAGU 1450 ACUCAGAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UACACGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UACACGG GCCGUUAGGC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCGAUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCGCGUUAGGC UCCGGG CCGAUUAGG GA GCCGUUAGGC UCCCUUCAAGG	GUCAGGGG		1442			UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CCCCUGAC	4903
UGUGUCUA 1444 UAGACACA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAGAAA 1445 UUUCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAACCGGC 1446 GCGGGUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCAUUUAA 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCUGUGU 1450 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG UAAUUCAC 1451 ACUCAGAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAUUCAC 1452 ACUCACAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CUAAUGACA 1452 GUGAAAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CUAAUGACA 1453 CUUCAUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CUAAUGACA 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG CUACAGAA GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACAGGG CCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACCAGG GCAGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACUCUG 1454 CGAGAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACUUCAG 1455 GAAGAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUAACACAGA <td< td=""><td>UCCGAUAA</td><td></td><td>1443</td><td>í i</td><td>1</td><td></td><td>GCCGUUAGGC</td><td></td><td>UUAUCGGA</td><td>4904</td></td<>	UCCGAUAA		1443	í i	1		GCCGUUAGGC		UUAUCGGA	4904
G UAAAGAAA 1445 UUUCUUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAACCCGC 1446 GCGGGUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAAUGGGG 1447 CCCCANUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCAUGHA 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCUGGGG 1450 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUUCAC 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUGAACAA 1452 UUGAUUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUGAACAA 1453 CUUCAUUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUGAACAA 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUG 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUG 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1456 GAGCAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UACCCCCA 1456 CUGGGUCAGG UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCAGG GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCGUUAGGG UCCGUUAGGC UCCGGGG G CAUCUCAGG GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG <td>UUGGAAAC</td> <td>G</td> <td>1444</td> <td>1</td> <td></td> <td>UCCCUUCAAGGA</td> <td>GCCGUUAGGC</td> <td></td> <td>GUUUCCAA</td> <td>4905</td>	UUGGAAAC	G	1444	1		UCCCUUCAAGGA	GCCGUUAGGC		GUUUCCAA	4905
G UAACCCGC 1446 GCGGGGUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAAUGGGG 1447 CCCCAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCAUUUAA 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCUGUGU 1450 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCUGUGU 1450 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCUGAACA 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUGAACAA 1452 UUGUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUUGAACA 1453 CUUCAUUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCACACAA 1454 CAGAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCACACAA 1454 CAGACAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCACACAA 1454 CAGACAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCACAGGA 1456 CAGACAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CACACAGA 1450 UAAAAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCACUUAGG 1450 UAAAAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCACUUAGG 1460	AUAUAAUG	G	1445			UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAUUAUAU	4906
G CAAUGGGG 1447 CCCCAUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCAUUUAA 1448 UUAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUCUGUGU 1458 ACACAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCCUGAGU 1450 ACUCAGGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUUCAC 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUGAACAA 1452 UUGUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUGAACAA 1453 CUUCAUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUUGAGG 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1455 CAUUGGUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1456 CUGGGUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACAGGA 1457 CAAGAGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACAGGA 1457 CAAGAGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CGAUUAGGA 1458 UAAAAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G UUGCUGAG 1461 AUAGUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G UUGCUGAGA 1462 GGAGUU	ACACCUUC	ซ	1446		Į.	l	GCCGUUAGGC	UCCGGG	GAAGGUGU	4907
G CCAUUNAA 1448 UVAAAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G UUCUGUGU 1449 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CCCUGAGU 1450 ACUCAGGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUGAACAA 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUGAACAA 1452 UUGUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUAUGAAG 1453 CUUCAUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUAUGACG 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1455 GAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1456 GAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1456 GAAGAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUUA 1450 UAAAAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUACAGGA 1450 UAAAAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUGACUAU 1450 UAAAAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G UUGCUGAG 1460 AUAGUCGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G UUGCUGAG 1461	GAUGUACA	ט	1447	l l	i i	1	GCCGUUAGGC		UGUACAUC	4908
G UUCUGUGU 1449 ACACAGAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CCCUGAGU 1450 ACUCAGGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUUCAC 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUGAACAA 1452 UUGUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUAUGAAG 1453 CUUCAUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUAUGUCG 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1455 GAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUUCA 1456 CAGAGAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUU	NUGG	G G CCAUUUAA	1448			1	GCCGUUAGGC		CCCAUUGC	4909
G CCCUGAGU 1450 ACUCAGGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUGGAGAUUCAC G UAAUUCAC 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUGAACAA 1452 UUGUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CAUUGUCG 1453 CUUCAUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1456 GAAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1456 GAAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGCACAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCGGGG G CAAUUUUA 1458 UCCUGUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC U	AUUUAAGA	ß	1449			1	GCCGUUAGGC		UCUUAAAU	4910
G UBANUCAC 1451 GUGAAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUGAACAA 1452 UUGUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUAUGUCG 1453 CUUCAUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUUGUCG 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGACCAG 1455 GAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCUG 1457 CAGAGAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCUG 1458 CAGAGAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGGG G CAACUUG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUUAGGA GCCGUUAGGC UCCGUUAGGC	UAGAAGGG	G	1450			1	GCCGUUAGGC	UCCGGG	CCCUUCUA	4911
G CUGAACAA 1452 UUGUUCAG GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGGG G CUAUGAAG 1453 CUUCAUAG GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1454 CGACAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC 1455 GAUUGCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUU	GGCCCUGA	ט	1451			1	GCCGUUAGGC	UCCGGG	UCAGGGCC	4912
G CAUUGUCG G UGCCAUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGCCAAUC G UGACCCAG G UGACCCAG G UGACCCAG G CAUCUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCUC G CAACAGGA G CAGGAUUAG G CAGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAAUUUUA G CAGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CGAUUUUA G CAGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CGAUUUUA G CAGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGACCACA G UGACCACA G UGACCACA G UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACACACA G UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACACACA G UCACCUCC G CAGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUGG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUGG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G CAACUGUG G CAACUUCA G CAGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G CAACUGUG G CAACUUCA G CACCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G CAACUCCACCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGGG G CAACUGUG G CAACUGUG G CAACUGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G CAACUGC G CAACUGUC G CAACUGUC G CACCUCACACUCA GGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGCC UCCGGC G CAACUGUC G CAACUGC G CACCUCACACACACA GGA GCCGUUAGCC UCCCCUCCACGC G CAACUGC G CAACUCACCACCACACACA GGA GCCGUUAGCC UCCCCUCCACCACCACCACCACCACCACCACACACAC	CUCAUUCA	Ö	1452				GCCGUUAGGC	UCCGGG	UGAAUGAG	4913
G CAUUGUCG G UGCAAUC G UGGGAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCAAUC G UUGCAAUC G UGGGUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCUG G CAUCUCUC G CAUCUCUG G CAUCUCUG G CAUCUCUC G CAUCUCUG G CACCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CACCUUCAAGGA GCA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G CAACUCUG G CAACUCUG G CAACUCUG G CAACUCUG G CAACUCUG G CAACUCUC G CACCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUCUG G CAACUCUC G CACCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUCUG G CACCUUCAAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGCC UCCGGC G CAACUCUC G CAACUC G CAACUC G CAACUC G CCCCC G CCCCUCCAACC G CCCCC G CCCCC G CCCCCC G CCCCC G CCCCC G CCCCC G CCCCCC G CCCCCC G CCCCC G CCCCCC G	AAC		1453			UCCCUUCAAGGA	GCCGUUAGGC		CAUUGUUG	4914
G UUGCAAUC 1455 GAUUGCAA GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UCCGUUAGGC	IGA.		1454			1	GCCGUUAGGC	UCCGGG	CUUCAUAG	4915
G UGACCCAG 1456 CUGGGUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAUCUCUG 1457 CAGAGAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CUACAGGA 1458 UCCUGUAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CGAUUUUA 1460 AUAGAUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGCCUGAGG GCCGUUAGGC UCCGGG G UCGCUCAAGGA GCCGUUAGGC UCCGGG G UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCAACUCC 1462 GGAGUAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCAAUGAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAGAUGGG G CCAUCUGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAGAUGGG G CCAUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGGG G CAACUGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGGG COCCGUUAGGC UCCGGC COCCGUUAGGC UCCGGC COCCGUUAGGC UCCGUUAGGC UCCGGC COCCGUUAGGC UCCGUUAGCC UCCGGC COCCGUUAGCC UCCGGC COCCGUUAGCC UCCGCGC COCCGUUAGCC UCCGCGC COCCGCCCCCCCCCCCCCCCCCCCCCCC	100	ט	S			1 1	GCCGUUAGGC	UCCGGG	GACAAUGC	4916
G CAUCUCUG G CUACAGGA G CUACAGGA G CUGACAGGA G CUGACUUUA G CUGACUUUA G CUGACUUUA G CUGACUAU G CUGACUAU G CUGACUAU G UUGCUGAG G UUGCUGAG G UCCUUCAAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCUGAG G UCCUUCAAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCCUUCAAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUG G UAAUGAUG G CAGAUGGG G CAGAUAGGC UCCGUUAGGC CCCGUUAGGC CCCGUUAGGC CCCGGG G UUAGCUGA	AGGACAUG	ប	1456			f i	GCCGUUAGGC	UCCGGG	CAUGUCCU	4917
G CUACAGGA G CUACAGGA G CUACAGGA G COGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CGAUUUUA 1460 AUAGUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCUGAG G UUGCUGAG G UCCACCAA G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCCACCACA G UCCACCAA G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCAAUGAUG G UAAUGAUG G CAGAUGGG G CAGAUGGC G CAGAUGGG G CAGAUGGG G CAGAUGGG G CAGAUGGG G CAGAUGGG G CAGAC	CCA		1457	1			GCCGUUAGGC	UCCGGG	CUGGGUCA	4918
G CGAUTUUA G CUGACUAU G CUGACUAU G CUGACUAU G CUGACUAU G CUGACUAU G CUGACUAU G UCCAUTCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCCACUCAAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACUCCAC G UCACUCAC G UCACUCAC G UCACUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUG G CAGAUGGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAGAUGGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAGAUGGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G CAACUGUG G CAACUGUG G UGAAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGAAAGGA 1465 CCCAUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGAAAGGA 1466 UCCUUUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACAUGUG G UCACAUGAGC G UCACAUCAGGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACAUCAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACAUCAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	UGA		1458			UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UUCAAACA	4919
G UUGCUGAG G UUGCUGAG G UUGCUGAG G UUGCUGAG G UUGCUUCAAGGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUGCUGAG G UUGCUGAG G UUGCUGAG G UCCAUCUCAAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUG G UAAUGAUG G CAGAUGGG C CCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G UGAAAGGA G UCCUUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACAUGAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UCACAUGAGC G UCACAUGAGC C UCACCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	ACAGGAAA	ರ	45			1	GCCGUUAGGC		unuccuen	4920
G UUGCUGAG G UUGCUCAGC G UCUACUCC G UCUACUCC G UCUACUCC G UCUACUCC G UCUACUCC G UCUACUCC G UCAGUAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUG G CAGAUGGG G CAGAUGGG G CAGAUGGG G CAACUGUG G UCCGUUAGGC UCCGUUAGGC UCCGGUUAGGC UCCGGG G CACCUUCAAGGA GCCGUUAGGC UCCGGG G UCCGUUAGGC UCCGUUAGGC UCCGGGG G UCCGUUAGGC UCCGUUAGGC UCCGGGG G UCCGUUAGGC UCCGUUAGGC UCCGGGGG G UCAGCUUAGGC UCCGUUAGGC UCCGGGGG C UCAGCUAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	AGACAAAG	ರ	1460				GCCGUUAGGC	UCCGGG	connenco	4921
G UCUACUCC 1462 GGAGUAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UAAUGAUG 1463 CAUCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAGAUGGG 1464 CCCAUCUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG GA GCCGUUAGGC UCCGGG G UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGAAAGGA 1466 UCCUUUCA GGA GCCGUUAGGC UCCGGG G UCACUUCAAGGA GCCGUUAGGC UCCGGG G UUAGCUGA GA GCCGUUAGGC UCCGGG G UCCCUUCAAGGA GCCGUUAGGC UCCGGG	AUGUUCUG	ರ	1461		1		GCCGUUAGGC	l	CAGAACAU	4922
G UAAUGAUG G CAGAUGGG I 1464 CCCAUCUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAGAUGGG I 1465 CACAGUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG G UAAAAGGA I 1466 UCCUUUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGAAAGGA I 1466 UCCUUUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUAGCUGA I 1467 UCAGCUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GUUGCUGA	ט	1462				GCCGUUAGGC	UCCGGG	UCAGCAAC	4923
G CAGAUGGG 1464 CCCAUCUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G CAACUGUG 1465 CACAGUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGAAAGGA 1466 UCCUUUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUAGCUGA 1467 UCAGCUAA GGA GCCGUUAGGC UCCCGUCAAGGA GCCGUUAGGC UCCGGG	UCCUCCAG	ರ	1463				GCCGUUAGGC	UCCGGG	CUGGAGGA	4924
G CAACUGUG 1465 CACAGUUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UGAAAGGA 1466 UCCUUUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUAGCUGA 1467 UCAGCUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	UACACUGA	ប	1464				GCCGUUAGGC	l	UCAGUGUA	4925
G UGAAAGGA 1466 UCCUUUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG G UUAGCUGA 1467 UCAGCUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GCAGAUGG	ರ	1465	1		1	GCCGUUAGGC	UCCGGG	CCAUCUGC	4926
G UNAGCUGA 1467 UCAGCUAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	AGAGAAGG	೮	1466			1	GCCGUUAGGC	1	ccnncncn	4927
	GGAAAAA		1467				GCCGUUAGGC	UCCGGG	υσυσσας	4928

929	930	931	932	.933	934	935	936	937	938	939	940	4941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	926	957	928	959	4960	961
JUU 4	3GU 4	200	3AC 4	PAU 4	AUC 4	AAA 4	JUC 4	3UA 4	AUC 4	3AA 4	AUA 4		JAC 4	JGA 4	CC 4	JGA 4	4	CG 4	4	JGU 4	JGG 4	4	4	4	JGU 4	4,	4	4	4	4		4
UAACUUUU	condoden	CUUACCUU	UCAUGGAC	CCACUCAU	UCCCCAUC	UCGUCAAA	UUGUAUUC	UGCUUGUA	UGAACAUC	CUGCUGAA	CAGUAAUA	UACAUUUG	UUCUUUAC	CUCCCUGA	UGCCUCCC	UUUAUUGA	UCACAUCC	concocce	UAUAGAAU	uncunnan	UUGUUUGG	UUCGGAGA	UUCCCAUG	GGAUCACU	ugugungn	UAAACACA	UUCCAGAU	CAUGCUUC	CAGUCGCC	UUGAUUCA	CUGCUUGA	しつしせせい
UCCGGG	UCCGGG	UCCGGG	UCCGGG	UCCGGG	UCCGGG	UCCGGG	UCCGGG		UCCGGG	UCCGGG	UCCGGG	UCCGGG		UCCGGG	UCCGGG	UCCGGG	UCCGGG	טטטטט														
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UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	GCCGUUAGGC UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	GCCGUUAGGC UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	UCCCUUCAAGGA	CAAGGA														
ncccnr	UCCCUL	UCCCUL	ucccur		ucccur	ucccur	ucccur	ucccu		ucccuu	ucccur	UCCCU		ucccuu	UCCCUU	ucccuu	ucccuu	ncccnn	ncccnn	ncccnn	ucccun	ucccuu	חכככתה	ncccnn	ncccnn	ncccnn	ncccnn	ນດວວນນ	ucccuu	ucccuu	ucccuu	UCCCUUCAAGGA
GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	JUAGGC	GCCGUUAGGC	GCCGUUAGGC	JUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC	GCCGUUAGGC														
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AG GGA	JA GGA	JG GGA	CA GGA	AG GGA	JA GGA	JA GGA	JG GGA	JA GGA	JG GGA	JA GGA	JA GGA	JA GGA	AS GGA	JG GGA	AG GGA	AA GGA	AA GGA	AG GGA	AA GGA	AG GGA	JG GGA	JG GGA	'A GGA	A GGA	GGA	A GGA	IG GGA	G GGA	IA GGA	IG GGA	IG GGA	G GGA
AUAUUCAG	AUGCCUUA	GACAAAUG	UGAGCCCA	UAGAUGAG	GUCAAAUA	UUAUUGUA	UCUUACUG	ACAUCUUA	AAUACCUG	CAGUAAUA	CAUUUGUA	CUUCUUUA	CCCUGACA	AACAGCUG	UGUAACAG	UCCUGUAA	AGAACAAA	UAUAGAAG	GAAUUCAA	GUUUGGAG	UGAUUUUG	CCCAUGUG	ACGGAUCA	CAGAAUCA	uvuggugg	GUCAAGGA	UCGCCAUG	ACCAGUCG	GGCGGUUA	CUGGCCUG	AAAGCUGG	AGGAAAAG
1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	1496	1497	1498	1499	1500
AUAU	3CAU	JGNC	CUCA	JCUA	JGAC	AUAA	AAGA	AUGU	JAUU	ACUG	AAUG	BAAG	∆ GGG	ງຜູນນ	JACA	AGGA	ນດດ	JAUA	AUUC	AAAC	NUCA	JGGG	CGU	JCUG	AAA	JGAC	CGA	IGGU	GCC	CAG	ממט:	נכנת
CUGAAUAU	UAAGGCAU	CAUUUGUC	UGGGCUCA	CUCAUCUA	UAUUUGAC	UACAAUAA	CAGUAAGA	UAAGAUGU	CAGGUAUU	UAUUACUG	UACAAAUG	UAAAGAAG	G UGUCAGGG	UCAGGGAG G CAGCUGUU	CUGUUACA	UUACAGGA	unnenncn	CUUCUAUA	UUGAAUUC		CAAAAUCA	CACAUGGG	CAUGGGAA G UGAUCCGU	UGAUUCUG	CCACCAAA	UCCUUGAC	CAUGGCGA	CGACUGGU			CCAGCUUU	CUUUUCCU
JUUA G	AAG G	TAAG G	UGA G	UGG G	GGA G	CGA G	CAA G	GCA G	UCA G	CAG G	CUG G	GUA G		GAG G	GCA G	AAA G	UGA G	AAG G	AUA G			GAA G	GAA G	AGUGAUCC G		UUA G	GAA G	AUG G		CAA G	CAG G	CCA G
AAAAGUUA	ACCACAAG	AAGGUAAG	GUCCAUGA	AUGAGUGG	GAUGGGGA	UUUGACGA	GAAUACAA	UACAAGCA	GAUGUUCA	UUCAGCAG	UAUUACUG	CAAAUGUA	GUAAAGAA	UCAGG	GGGAGGCA	UCAAUAAA	GGAUGUGA	CGGAGAAG	AUUCUAUA	ACAAAGAA	CCAAACAA	UCUCCGAA	CAUGG	AGUGA	ACAACACA	UGUGUUUA	AUCUGGAA	GAAGCAUG	GGCGA	UGAAUCAA	UCAAGCAG	GCAGGCCA
784	803	808	822	826	844	855	901	904	916	920	929	940	948	959	962	994	1023	1054	1090	1126	1137	1163	1174	1181	1224	1279	1298	1303	1310	1336	1340	1344

MACAR G UTIGAGENE 1501 CARCUCCAG GAR GCCGUUAGGC CCCCUUCAAGGA GACCUCAGA GAACUCCAGA GAACUCAGA GAACUCAGA	UDGAGGUG 1501 CAGCUCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUGGGGU 1502 GACCCCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCCUGGGU 1503 ACCCAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCCUGGGU 1504 CAUCCCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACAUUU 1504 CAUCCCAA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACAUCA 1504 UGAGUAGCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACAGUA GGGGAGCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACAGGA GGGGAGCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACAGGA GGCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC UCCGUUAGGC CAGGGAGA CAGUCACA 1510 UGAAGCUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCCUUCAACAA GCCGUUAGGC UCCGGG UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCCUUCAAGGA GCCGUUAGGC GCGCCUUAGGG GCCCUUCAGG GCCCUUCAGG GCCCUUCAGG GCCCUUCAGG GCCCUUCAGG GCCCUUCAGG GCCCUUCAGG		4962	4963	4964	4965	4966	4967	4968	4969	4970	4971	4972	4973	4974	4975	4976	4977	4978	4979	4980	4981	4982	4983	4984	4985	4986	4987	4988	4989	4990	4991	4992	4993
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	AACAGCCA G UGGAUGAA	1535	UUCAUCCA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UGGCUGUU	4996
	GAUGAAUG G CACAGUGA	1536	UCACUGUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAUUCAUC	4997
	AUGGCACA G UGAUCGUG	1537	CACGAUCA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGUGCCAU	4998
	CAGUGAUC G UGGACAGC	1538	GCUGUCCA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GAUCACUG	4999
	CGUGGACA G CACCGUGG	1539	CCACGGUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGUCCACG	5000
	ACAGCACC G UGGGAAAG	1540	CUUUCCCA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GGUGCUGU	5001
	ACAACGCA G CCUCCCCA	1541	UGGGGAGG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	uecennen	5002
	GGAUCCCA G UGGACAGA	1542	UCUGUCCA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGGGAUCC	5003
	GGACAGAA G CAAGGUGG	1543	CCACCUUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	uncuencc	5004
	GAAGCAAG G UGGCUUUG	1544	CAAAGCCA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CUUGCUUC	5005
. 1	GCAAGGUG G CUUUGUAG	1545	CUACAAAG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CACCUUGC	5006
f	GCUUUGUA G UGGACAAA	1546	UUUGUCCA GGA (GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UACAAAGC	5007
	CCAAAAUG G CCUACCUC	1547	GAGGUAGG GGA (GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (CAUUUUGG	5008
	AAUCCCAG G CAUUGCUA	1548	UAGCAAUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CUGGGAUU	5009
- 1	UUGCUAAG G UUGGCACU	1549	AGUGCCAA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (CUUAGCAA	5010
- 1	UAAGGUUG G CACUUGGA	1550	UCCAAGUG GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAACCUUA	5011
	GAAAUACA G UCUGCAAG	1551	CUUGCAGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UGUAUUUC	5012
- 1	GUCUGCAA G CAAGCUCA	1552	UGAGCUUG GGA (GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UUGCAGAC	5013
- 1	GCAAGCAA G CUCACAAA	1553	UUUGUGAG GGA (GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UUGCUUGC	5014
	ACUGUCAC G UCCCGUGC	1554	GCACGGGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GUGACAGU	5015
	CACGUCCC G UGCGUCCA	1555	UGGACGCA GGA C	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GGGACGUG	5016
	ט	1556	GCAUUGGA GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG (GCACGGGA	5017
	ರ	1557	GGAAGUCA GGA C	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGUAAUUG	5018
- 1	GGACACCA G CAAAUUCC	1558	GGAAUUUG GGA C	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGGUGUCC	5019
- 1	AUUCCCCA G CCCUCUGG	1559	CCAGAGGG GGA C	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGGGGAAU	5020
- 1	GCCCUCUG G UAGUUUAU	1560	AUAAACUA GGA C	SCCGUUAGGC	GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG C	CAGAGGGC	5021
- 1	CUCUGGUA G UUUAUGCA	1561	UGCAUAAA GGA	SCCGUUAGGC	GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UACCAGAG	5022
- 1	GCCAAGGA G CCUCCCCA	1562	UGGGGAGG GGA C	3CCGUUAGGC	GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	uccuuggc	5023
	UUCUCAGG G CCAGUGUC	1563	GACACUGG GGA C	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG C	CCUGAGAA	5024
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	GUGUCACA G CCCUGAUU	1565	AAUCAGGG GGA G	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG 1	UGUGACAC	5026

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	2263 (GAAAAACA G UUACCUUG	1567	CAAGGUAA GGA	GCCGUUAGGC	UCCCUUCAAGGA G	GCCGUUAGGC	uccese usumunc	JC 5028
UGGAGCAG G UGCUGAUG 1569 CAUCAGCA GGA GCCGUUAGGC GGAUGACG G UGCUGAUG 1570 AGUAGACA GGA GCCGUUAGGC UACUCAAG G UGUUCACU 1571 GUGAAADA GGA GCCGUUAGGC UAGUUAGAC G UGAGAGCA 1571 GUGAAADA GGA GCCGUUAGGC UAGAUGACA G UGCGGGCU 1574 AGCCCGACA GGA GCCGUUAGGC AAGUGAGA G UGCGGGCU 1574 AGCCCGUUAGGC AAGUGAGA G UGCGGCC 1576 UCCCAGAG GGA GCCGUUAGGC UAAACGCA G CAGAGCGG 1577 CCCUCUGG GGA GCCGUUAGGC UAAACGCA G CAGAGUGG 1580 GCCGUUAGGC AAACCCCAGA G UGAGCAC 1581 GCCGUUAGGC AAACCCCAGA G UGAGCAC 1581 GCCGUUAGGC AUACCCCAGA G UGAGCAC 1581 GCCGUUAGGC ACACACAGA G UGGAGCAC 1581 GCCGUUAGCC CCAG		G	1568	1 :		UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG UCCAUUAU	U 5029
GGAUGACG G UGUCUACU 1570 AGUAGACA GGA GCCGUUAGGC UACUCAAG G UAUUUCAC 1571 GUGAAUA GGA GCCGUUAGGC CACGAAUG G UAUUUCACA 1572 UGUAUCUA GGA GCCGUUAGGC UAGAUGACA 1573 CUUUUACA GGA GCCGUUAGGC GUGUAAAA 1573 CUUUUACA GGA GCCGUUAGGC UAGGAGGA G UUAACGCA 1574 AGCCCGCA GGA GCCGUUAGGC UUGAGAGGA G UUAACGCA 1575 UCCCACUAGG GGA GCCGUUAGGC UUGAGAGGA G UGAGACGC 1576 UCCCACUAGG GGA GCCGUUAGGC AUACCCCA G CAGAGGG 1577 CCACUCUG GGCGUUAGGC CCAGCAGA G CAGAGUGG 1579 CCACUCUG GCCGUUAGGC CCAGAGAGA G UGAGACGC 1581 GGCGUUAGGC GCCGUUAGGC CCAGAGAGA G UGAGAGCAC 1581 GGCGCUUAGGC GCCGUUAGGC CCAGAGAGA G UGUGUUCA G CAGACCAC GCCGCUUAGGC GCCGCUUAGGC CCAGAGAGA G UGUGUUCA G CAGACACAC G CAGACACACAC		ß	56			UCCCUUCAAGGA G	GCCGUUAGGC	uccees cuecucca	'A 5030
UACUCAAG G UAUUUCAC 1571 GUGAAAUA GGA GCCGUUAGGC CACGAAUG G UAGUACA 1572 UGUAUUCAC GGA GCCGUUAGGC UAGAUACA 1573 CUUUUACA GGA GCCGUUAGGC GUGUAAAA 1574 AGCCCGCA GGA GCCGUUAGGC GUGUAAAA 1574 AGCCCGCA GGA GCCGUUAGGC UAGGGAGG G UUAACGCA 1576 UCCCAGAGG GGA GCCGUUAGGC UUAACGCA G CAGAGGG 1576 UCCCUUCAG GGA GCCGUUAGGC CAGAGGGA G UGAGGCAC 1579 CCACUCUG GGCGUUAGGC CAGAGGGA G UGAGGCAC 1580 GGCGUUAGGC GCACGUUAGGC CAGAGGGA G UGAGGCAC 1580 GGCGUUAGGC GCACGUUAGGC CAGAGGGA G UGAGGCAC 1581 GUGCUUAGGC GCACGUUAGGC CAAACCACAA G CAGAGGGC 1581 GUGCGUUAGGC GCACGUUAGGC CAAAGCACAA G CAGACACA 1581 GACCGUUAGGC GCACGUUAGGC CAAAGCAAA G CAGAACAA 1581 AUCAGGAGG GCCGCUUAGGC CAAAGGAAA		ರ	1570		1 :	UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG CGUCAUCC	C 5031
CACGAAUG G UAGAUACA 1572 UGUAUCUA GGA GCCGUUAGGC UAGAUACA G UGUAAAAG 1573 CUUUUACA GGA GCCGUUAGGC GUGUAAAA G UGCGGCCA GGA GCCGUUAGGC GCCGUUAGGC AAGUGCGG G UUAACGCA 1574 AGCCCGCA GGA GCCGUUAGGC UAGAGGAGA 1575 UCCCAGAC GGA GCCGUUAGGC UUAACGCA G CAGAGGG 1577 CCGUCUGG GGA GCCGUUAGGC GAGGAGGA 1576 UGCGUUAC GGA GCCGUUAGGC GA GCCGUUAGGC AUACCCCA G CAGAGGGA 1581 GUGCUUCA GGA GCCGUUAGGC AUACCCCA G CAGAGGAC 1581 GUGCUUCA GGA GCCGUUAGGC AUACCCCA G CAGAGGAC 1582 CAACUCG GA GCCGUUAGGC CAACACACA G CUCAUUUC 1583 CAACUCG GA GCCGUUAGGC CACACCCG G CUCAUUCA G CCCACCACA GA GCCGUUAGGC CACUCGGAG G CCCACCACA		JACUCAAG G DAUJUCAC	1571			ucccuucaagga g	GCCGUUAGGC	uccege cuugagua	IA 5032
UAGAUACA G UGUAAAAG 1573 CUUUUACA GGA GCGCUUAGGC GUGUAAAA G UGCGGCCU 1574 AGCCCGCA GGA GCCGUUAGGC AAGUGCGG G CUCUGGAA 1575 UCCCAGAG GGA GCCGUUAGGC UAGACGCA G UVAACGCA 1576 UGCGUUAA GCA UVAACGCA G CCAGACGG 1577 CCGUCUGG GGA GCCGUUAGGC GACGGAGA G UGAACCC 1578 GGGUAUCA GCA GACGGAGA G UGAACACC 1580 GUGCUUCAGG AUACCCCA G CAGAGUGG 1580 CCACUCUG GCA AUACCCCA G CAGAGUGG 1580 GUGCUUCAGG AUACCCCA G CAGAGUGG 1580 GUGCUUAGGC CAAAGUGGA G UGGAUUC 1581 GACCGUUAGGC CAAACCACAA G UGUGUUUC 1583 CACACUUG GCA ACAAGCAA G UGUGUUUC 1584 GAAACACA GCCGUUAGGC ACAAGCAA G UGUGUUUC 1586 CAAAUGAG GCCGUUAGGC ACAAGCAA G UGCAAAUU 1587 AUCUAGAAG GCCGUUAGGC CCACCCUG G CUAAAUCA 1580 MAAUUCCG GCCGCUUAGGC ACCAGGAG G CUCACAGG GCGACACUCG GCGCACUCG GCGCCCCCCC ACCAGGAGG G CUCAACAU		ß	1572			UCCCUUCAAGGA G	GCCGUUAGGC	uccege cauuceue	JG 5033
GUGUAAAA G UGCGGGCU 1574 AGCCCGCA GGA GCCGUUAGGC AAGUGCGG C CUCUGGGA 1575 UCCCAGAG GGA GCCGUUAGGC UGGGAGGA UAAACGCA 1576 UCCCAGAG GGA GCCGUUAGGC UVAACGCA G CAGAGGG 1577 CCGUCUGG GGA GCCGUUAGGC GACGAGA UGAAGCAC 1578 GGGUAUCA GGA GCCGUUAGGC AVACCCCA G CAGAGUGG 1579 CCACUCUG GGA GCCGUUAGGC ACAGCAGA G UGGAGCAC 1580 GUGCUCCA GGA GCCGUUAGGC CACACCACA G CAGGAUUG 1581 GUACCCCA GGA GCCGUUAGGC CACACACAA G CAGGAUUG 1581 GAACCACA GCCGUUAGGC CACACACAA G CAGAACAU 1581 CACACUUAGGC CACACUUAGGC ACAAGCAA G CAGAACAU 1582 CACACUUAGGC CACACUUAGGC CCACACACA G CAGAACAU 1581 AUGUUCUCA GGA GCCGUUAGGC CCACACCUG G CAGAACAU 1580 UGACGUUAGG GCCGUUAGGC CCCACCUG GCCGUUAGGC CCCACCUG G CUCAUUUG G CCAAAUCG GCCAACUG GCCACCUG		ט	57	1	1	UCCCUUCAAGGA G	GCCGUUAGGC	uccees usuaucua	IA 5034
AAGUGCGG G CUCUGGGA 1575 UCCCAGAG GGA GCCGUUAGGC UGGGAGGA U AACGCA 1576 UGCGUUAA GGA GCCGUUAGGC UUAACGCA G CAGAGGG 1577 CCGUCUGG GGCGUUAGGC GACGGAGGA 1578 GGGUAUCA GGA GCCGUUAGGC AUACCCCA G CAGAGUGG 1580 GUGCUCCA GGA GCCGUUAGGC CCAGCAGA G CAGAGUGC 1581 GUGCUCCA GGA GCCGUUAGGC CCAGCAGA G CAGAGUGC 1581 GUGCCCCA GGA GCCGUUAGGC CCAGCACA G CAGAGUGC 1581 GUACCCCA GGA GCCGUUAGGC CCAACCACA G CAGAGUGC 1583 CACACUCG GGCGUUAGGC GCCGUUAGGC CCACACACA G CAGACACA 1584 GAAACACA GCCGUUAGGC GCCGUUAGGC CCACCACAGA G CAGACACA 1584 AUGUUCCA GGA GCCGUUAGGC CCACCCCAG G CAGACCACA GCACCUUAGGC GCACCUUAGGC GCACCACACACA GCACCACACACA GCACACACACAC	4	ט	1574		1	UCCCUUCAAGGA G	GCCGUUAGGC	uccege ununacac	C 5035
UGGGAGGA G UDAACGCA 1576 UGCGUUAA GGG GCCGUUAAGGC UUAACGCA G CCAGACGG 1577 CCGUCUGG GGA GCCGUUAAGGC GACGGAGA G UGAGGCAC 1578 GGGUAUCA GGA GCCGUUAAGGC AUACCCCA G CAGAGUGG 1580 GUGCUCCA GGA GCCGUUAAGGC CCAGCACAA G UGGAUUC 1581 GUACACCA GGA GCCGUUAGGC CAACACAA G CUGGAUUC 1582 CAAUCCAG GGA GCCGUUAGGC CAACACAA G CUGGAUUC 1583 CACACUUAGGC CAAACACA GGA GCCGUUAGGC CAACACAA G UGGGUUC 1584 GAAACACA GGA GCCGUUAGGC CAACACAA G UGGGAACAU 1584 GAAACACA GGA GCCGUUAGGC CACGCCOGGA G CUCCAUUCAU 1589 AUGUUCUG GCCGUUAGGC CCACCCCUG G CUCCAUUCACA 1580 AUGACACA GGA GCCGUUAGGC CCACCCUG G CUCCAUUCACA 1580 AUGACACA GGA GCCGUUAGGC <td>,</td> <td>ט</td> <td>57</td> <td></td> <td>1</td> <td>UCCCUUCAAGGA G</td> <td>GCCGUUAGGC</td> <td>UCCGGG CCGCACUU</td> <td>JU 5036</td>	,	ט	57		1	UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG CCGCACUU	JU 5036
UUAACGCA G CCAGACGG 1577 CCGUCUGG GGA GCCGUUAGGC GACGGAGA G UGAUACCC 1578 GGGUAUCA GGA GCCGUUAGGC AUACCCCA G CAGAGUGG 1579 CCACUCUG GGA GCCGUUAGGC CCAGCAGA G UGGAGCAC 1580 GUGCUCCA GGA GCCGUUAGGC AGAGUGGA G CACUGUAC 1581 GUACAGGG GGA GCCGUUAGGC CAUACCUG G CUGGAUUG 1582 CAAUCCAG GGA GCCGUUAGGC CAAAGCAA G CUGGAUUG 1583 CACACUUG CAAAGCAA G CUGGAUUG 1584 GAAACACA GACGUUAGGC 1584 GAAACACA GGA GCCGUUAGGC GUGUUUCA G CAGAACAU 1586 CAAAUGAGC CCCACCUG G CACAAUCA 1586 CAAAUGAGC CCCACCUG G CCAAAUCA 1589 AAUUUCCG GGA GCCGUUAGGC CCCACCUG G CCAAAUCA 1589 AAUUUCCG GGA GCCGUUAGGC ACCUGAAG G CUCCUGGG CCCAGGAG GCCGUUAGGC CCCAGGGG G CAGUCUCA 1590 UGAGGCCUUAGGC ACCAGGG G CUCCUGGG GCCGUUAGGC GCCGCUUAGGC CCCAGGGG G CUCCUGGG GCCGCUUAGGC GCCGCUUAGGC		Ö	1576		l	UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG UCCUCCCA	'A 5037
GACGGAGA G UGAUACCC 1578 GGGUAUCA GGA GCCGUUAGGC AUACCCCCA G CAGAGUGG 1579 CCACUCUG GGA GCCGUUAGGC CCAGCAGAG G UGGAGCAC 1581 GUACAGUG GGA GCCGUUAGGC AGAGUGGA G CACUGUAC 1581 GUACAGUG GGA GCCGUUAGGC CAUACCCG G CUGGAUUG 1582 CAAUCCAG GGA GCCGUUAGGC CAACACACA G CACGUUAC 1583 CACACUUG GGA GCCGUUAGGC ACAACACAA G CAGAACAU 1584 GAAACACA GGA GCCGUUAGGC ACAAGCAA G CAGAACAU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUUG 1586 AUCAGUAGG CUCGGGAG G CUCAUUUG 1580 AUCAGAAG GGA GCCGUUAGGC CCCACCUG G CCAAAUCA 1580 UGAUUCCG GGA GCCGUUAGGC ACCUGAAG G CCGAAAUU 1580 UGAGACUG GGA GCCGUUAGGC ACCGGGGCA G CCCACAGG G CAGACCAGG G CAGACCAGG G CAGACCUAGG GCCGUUAGGC ACCGGGGCA G CCCCAGGG G CAGACAUAGG GCCGUUAGGC ACCGGGGCA G CCCCACAGG G GA GCCGUUAGGC CCCAAGACA G CCCCACAGG GGA GCCGUUAGGC CCUACACAA G CCCCACAGG G GA GCCGUUAGGC CCCAAGACA G CCCCACAGG G GA GCCGUUAGGC ACGAGACAA G CCCCACAGG G CAGACAA G GA GCCGUUAGGC CCCACACAG G CCCCACAGAG G GA GCCGUUAGGC		ט	1577	ı		UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG UGCGUUAA	A 5038
AUACCCCA G CAGAGUGG 1579 CCACUCUG GGA GCCGUUAGGC CCAGCAGA G UGGAGCAC 1580 GUGCUCCA GGA GCCGUUAGGC AGAGUGGA G CACUGUAC 1581 GUACACCUG GGA GCCGUUAGGC CAUACCUG G CUGGAUUG 1582 CAAUCCAG GGA GCCGUUAGGC CAACACACAA G CAGAGUGUG 1583 CACACUUG GGA GCCGUUAGGC ACAAGCAA G CAGAGUGU 1584 GAAACACA GUGUUUCA G CAGAACAU 1584 GACGUUAGGC CUCGGGAG G CUCAUUUG 1585 AUCAGAGG CUCGGGAG G CUCAUUUG 1586 CAAAUGAGC CAUUUGUG G CUCAUUAGG 1589 AUCAGAAG ACCUGAAG G CCGAAAUCA 1589 AAUUUCCG ACCACCUG G CCCACCUG G CCGAAAUCA 1589 AAUUUCCG ACCAGGGC G CCCACCUG G CCGAAAUCA 1590 UGAGACUG ACCACCUG G CCCACCUG G CCCACCUG G CCGUUAGGC ACCACCUG G CCCACCAGG G CCCACCAGG G CCCACUAGGC ACCAGGGC G CUCACAAC 1590 UGAGGCACA GCCGUUAGGC		ש	1578			UCCCUUCAAGGA G	GCCGUUAGGC	ucceee ucucceuc	JC 5039
CCAGCAGA G UGGAGCAC 1580 GUGCUCCA GGA GCCGUUAGGC AGAGUGGA G CACUGUAC 1581 GUACAGUG GGA GCCGUUAGGC CAUACCUG G CUGGAUUG 1582 CAAUCCAG GGA GCCGUUAGGC CAACACAA G CAGGUUUC 1583 CACACUUG GGA GCCGUUAGGC CAACACCAA G CAGAACAU 1584 GAAACACA GAA GCCGUUAGGC GUGUUUCA G CAGAACAU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUGG 1586 CAAAUGAG CCCACCUG G CUCAAUCA 1589 AAUUUCCG GGA GCCGUUAGGC CCCACCUG G CCAAAUCA 1589 AAUUUCCG GGA GCGUUAGGC ACCUGAAG 1589 AAUUUCCG GGA GCGUUAGGC ACCUGAAC 1590 UGAGACUG GCGUUAGGC CCCACCUG G CAGAAUCA 1590 UGAGACUG GCGUUAGGC ACCUGAAG 1590 UGAGACUG GGA GCGUUAGGC CUUGGACA G UCUCAUUA 1591 UAAUGACA GCGUUAGGC CUUGGACA G UCUCACAAG 1594 AUGAUAUA AUGAAUAA G UACAAGUA 1595 UACAAGAA AAGAACAA 1596 AAGAAAUAA AAGAACAA 1594 AUGAUAUAA AAGAAAAAAAAAAAAAAAAAAAAAA	4	ט	57		1	UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG UGGGGUAU	JU 5040
AGAGUGGA G CACUGUAC 1581 GUACAGUG GGA GCCGUUAGGC CAUACCUG G CUGGAUUG 1582 CAAUCCAG GGA GCCGUUAGGC CAACACAA G CAAGUGUG 1583 CACACUUG GGA GCCGUUAGGC ACAAGCAA G UGUGUUC 1584 GAAACACA GGA GCCGUUAGGC GUGUUUCA G CAGAACAU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUUG 1586 CAAAUGAG CAUCUGAU 1586 CAAAUGAG CAUCUGAG G CCGAUAGGC CCCACCUG G CCCAAAUCA 1589 AAUUUCC ACCUGAAG G CGGAAAUU 1589 AAUUUCC GGA GCCGUUAGGC CCCACCUG G CCCAAAUCA 1590 UGAGACUG GCCGUUAGGC ACCUGAAG G CGCAAAUCA 1591 UAAUGACG GCCGUUAGGC CCGGGGGCA G CCCACUGGG G CGGAAAUA 1591 UAAUGACG GCCGUUAGGC CCGGGGGCA G CCCACCGG G CCCACCGG GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC CUUGGACA G UCCACAGG G CCCACGGG G CCCACGGG GCCGUUAGGC GCCGCUAGGG G CUCACAAG G UCCAC			1580	1 :		UCCCUUCAAGGA G	GCCGUUAGGC	uccese ucuecues	ig 5041
CAUACCUG G CUGGAUUG 1582 CAAUCCAG GGA GCCGUUAGGC CAACACAA G CAAGUGUG 1583 CACACUUG GGA GCCGUUAGGC ACAAGCAA G UGUGUUUC 1584 GAAACACA GGA GCCGUUAGGC GUGUUUCA G CAGAACUU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUG 1586 CAAAUGGC GCCGUUAGGC CCAUUGUG G CUCAAUCA 1589 AAUUUCCG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1591 UAAUGAG GCCGUUAGGC ACCUGAAG G CGCACAGG GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC CUUGGACA G CUCACAAG 1591 UAAUGAGA GCCGUUAGGC AUGGAACA G CUCACAAG 1593 CUUGUGAG GCCGUUAGGC GCUCACAA G UACACAAG 1594 AUGAUAUA GA GCCGUUAGGC AAGUACAA G UACAAAGA	i	AGAGUGGA G CACUGUAC	1581		1 1	ucccuucaagga g	GCCGUUAGGC	uccese uccaeucu	JU 5042
CAACACAA G CAACHUUG GGA GCCGUUAGGC ACAAGCAA G UGUGUUUC 1584 GAAACACA GGA GCCGUUAGGC GUGUUUCA G CAGAACAU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUUG 1586 CAAAUGAG GCGGUUAGGC CCAUUUGUG G CUCAAUUC 1588 UGAUUUCG GGA GCCGUUAGGC CCACCUG G CCAAAUCA 1589 AAUUUCCG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1589 AAUUUCG GGA GCCGUUAGGC ACCACGGGG G CAGUCUCA 1590 UGAGACU GG GCCGUUAGGC CCGGGGGC G CCCCACGGG G CCCCUCACGG GCCGUUAGGC GCCGUUAGGC CUUGGACA G CUCCACAGG 1592 CCCAGGGG GCCGUUAGGC AUGGAACA G CUCACAAG 1593 CUUGUGAG GCCGUUAGGC AUGGAACA G UACAAGGA 1594 AUGAUAUA GA GCCGUUAGGC AAGUACAA G UACAAGGA 1596 CAAGAAUA GA </td <td>0</td> <td>ß</td> <td>1582</td> <td></td> <td></td> <td>UCCCUUCAAGGA G</td> <td>GCCGUUAGGC</td> <td>UCCGGG CAGGUAUG</td> <td>JG 5043</td>	0	ß	1582			UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG CAGGUAUG	JG 5043
ACAAGCAA G UGUGUUUC G AAACACA GGA GCCGUUAGGC GUGUUUCA G CAGAACAU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUUG 1586 CAAAUGAG GGA GCCGUUAGGC CAUUUGUG G CUCAAUUA 1588 UGAUUUGG GGCGUUAGGC ACCACCUG G CCAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC ACCACGGG G CGGAAAUU 1590 UGAGACUG GGA GCCGUUAGGC UCACGGGG G CAGUCUCA 1591 UAAUGAGA GCCGUUAGGC CUUGGACA G UCCACAAG 1591 UAAUGAGA GCCGUUAGGC CUUGGACA G UCCACAAG 1593 CUUGUGAG GCCGUUAGGC AUGAAUAA G UACAAAGU 1594 AUGAUAUA GCCGUUAGGC AAGUACAA G UACAAAGUA 1595 UACUUGUA GCCGUUAGGC AAGUACAA G UACAAAGUA 1596 CAAGAAUA GCCGUUAGGC AAGUACAA G UACAAAGUA 1596 CAAGAAUA GCCGUUAGGC AAGAGACAA G UACAAAGAA 1596 CAAGAAA	3	ש	1583			UCCCUUCAAGGA G	GCCGUUAGGC	ncceee nnenenne	JG 5044
GUGUUUCA G CAGAACAU 1585 AUGUUCUG GGA GCCGUUAGGC CUCGGGAG G CUCAUUUG 1586 CAAAUGAG GGA GCCGUUAGGC CAUUUGUG G CUUCUGAU 1587 AUCAGAAG GGA GCCGUUAGGC CCCACCUG G CCAAAUCA 1588 UGAUUUGG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC VCACGGGG G CAGUCUCA 1590 UGAGACUG GGA GCCGUUAGGC CGGGGGCA G UCUCACAAG 1591 UAAUGAGA GCCGUUAGGC CUUGGACA G CUCACAAG 1592 CCCAGGAG GGA GCCGUUAGGC AUGGAACA G CUCACAAG 1593 CUUGUGAG GGA GCCGUUAGGC GCUCACAA G UAUAUCAU 1594 AUGAUAUA GCCGUUAGGC AUGGAACA G UACAACAG 1595 UACAUUGUA GGA GCCGUUAGGC GCUCACAAG 1594 AUGAUAUA GA GCCGUUAGGC AAGUACAA G UACAACAG 1595 UACAUUGUA GGA GCCGUUAGGC AAGUACAA G UACAACAG 1596 CAAGAAUA GA GCCGUUAGGC AAGUACAA G UACAACAG 1596 CAAGAAUA GA GCCGUUAGGC AAGAGACAA G UACAACAG 1596 CAAGAAUA GA GCCGUUAGGC AAGAGACAA G UACAACAG 1597	7	ש	1584			UCCCUUCAAGGA G	GCCGUUAGGC	uccese unecunen	JU 5045
CUCGGGAG G CUCAUUUG G CAAAUGAG GGA GCCGUUAGGC CAUUUGUG C CUCAAUCA 1587 AUCAGAAG GGA GCCGUUAGGC CCCACCUG G CCGAAAUCA 1588 UGAUUUGG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1590 UGAGGCUG GCCGUUAGGC UCACGGGG C AGUCCUCA 1591 UAAUGAGA GCCGUUAGGC CUUGGACA G UCUCACAAG 1592 CCCAGGAG GCCGUUAGGC AUGGAACA G UCACACAAG 1593 CUUGUGAG GCCGUUAGGC AUGGAACA G UAUAUCAU 1594 AUGAUAUA GA GCCGUUAGGC AUGGAAUAA G UAUAACAA 1595 UACAUUGUA GA GCCGUUAGGC AAGUACAA G UAUAAUCAU 1595 UACAUUGUA GA GCCGUUAGGC AAGUACAA G UAUAAUGA 1596 CAAGAAUA GA GCCGUUAGGC AAGAGACAA G UAUAAUGA 1596 CAAGAAUA GA GCCGUUAGGC AAGAGACAA G UACAAUGA 1596 CAAGAAA		G	1585			ucccuucaagga <u>g</u>	GCCGUUAGGC	UCCGGG UGAAACAC	C 5046
CAUUUGUG G CUUCUGAU 1587 AUCAGAAG GGA GCCGUUAGGC CCCACCUG G CCAAAUCA 1589 AAUUUCCG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC UCACGGG G CAGUCUCA 1590 UGAGACUG GGA GCCGUUAGGC CGGGGGCA G UCUCAUUA 1591 UAAUGAGA GCCGUUAGGC CUUGGACA G UCCCUGGG 1592 CCCAGGAG GCCGUUAGGC AUGGAACA G UCCACAAG 1593 CUUGUGAG GCCGUUAGGC GCUCACAA G UAUAUCAU 1594 AUGAUAUA GGA GCCGUUAGGC GCUCACAA G UACAAGUA 1595 UACUUGUA GGA GCCGUUAGGC AAGUACAA G UACAAGUA 1595 UACUUGUA GGA GCCGUUAGGC AAGAGACAA G UACAAUGA 1595 UACAUUGUA GGA GCCGUUAGGC AAGAGACAA G UUCAAUGA 1596 CAAGAAUA GCCGUUAGGC AAGAGACAA G UUCAAUGA 1597 UCAUUGAA GCCGUUAGGC CUCUUCAAA G UGAAUACA	10	ט	1586		1	UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG CUCCCGAG	G 5047
CCCACCUG G CCAAAUCA 1588 UGAUUUGG GGA GCCGUUAGGC ACCUGAAG G CGGAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC UCACGGGG G CAGUCUCA 1590 UGAGACUG GGA GCCGUUAGGC CGGGGGCA G UCCCUGGG 1591 UAAUGAGA GCCGUUAGGC AUGGAACA G CUCCACAAG 1593 CUUGUGAG GCCGUUAGGC AUGGAACA G UACACAAG 1594 AUGAUAUA GCCGUUAGGC GCUCACAA G UACAAGGA 1595 UACUUGUA GA GCCGUUAGGC AAGUACAA G UACAAGGA 1595 UACUUGUA GA GCCGUUAGGC AAGUACAA G UACAAGGA 1595 UACUUGUA GA GCCGUUAGGC AAGAGACAA G UACAAUGA 1596 CAAGAAUA GCCGUUAGGC AAGAGACAA G UACAAUGA 1597 UCAUUGAA GCCGUUAGGC CUCUUCAA G UGAAUACA 1598 AGUAUUCA GA GCCGUUAGGC CUCUUCAAAGAA G UGAAUACA 1598 AGUAUUCA<		ש	1587			UCCCUUCAAGGA G	GCCGUUAGGC	UCCGGG CACAAAUG	JG 5048
ACCUGAAG G CGGAAAUU 1589 AAUUUCCG GGA GCCGUUAGGC UCACGGGG G CAGUCUCA 1590 UGAGACUG GGA GCCGUUAGGC CGGGGGCA G UCUCAUUA 1591 UAAUGAGA GGA GCCGUUAGGC CUUGGACA G CUCCACAAG 1593 CCCAGGAG GA GCCGUUAGGC AUGGAACA G UCCACAAG 1594 AUGAUAUA GA GCCGUUAGGC UCGAAUAA G UACAAGUA 1595 UACUUGUA GGA GCCGUUAGGC AAGUACAA G UACAAGUA 1596 CAAGAAUA GCCGUUAGGC AAGUACAA G UUCAAUGA 1596 CAAGAAUA GCCGUUAGGC AAGAGACAA G UUCAAUGA 1596 CAAGAAUA GCCGUUAGGC AGAGACAA G UCAAUGAA 1597 UCAUUGAA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GA GCCGUUAGGC CAAAAGGAA G UCAACUCU 1599 AGAGUUCA GA GCCGUUAGGC		ษ	58		1	UCCCUUCAAGGA G	GCCGUUAGGC	uccees cassuses	iG 5049
UCACGGGG G CAGUCUCA 1590 UGAGACUG GGA GCCGUUAGGC CGGGGGCA G UCUCAUUA 1591 UAAUGAGA GGA GCCGUUAGGC CUUGGACA G CUCCUGGG 1592 CCCAGGAG GGA GCCGUUAGGC AUGGAACA G CUCACAAG 1593 CUUGUGAG GGA GCCGUUAGGC GCUCACAA G UACAAAGUA 1594 AUGAUAUA GA GCCGUUAGGC UCGAAUAA G UACAAAGUA 1595 UACUUGUA GCCGUUAGGC AAGUACAA G UUCAAUGA 1596 CAAGAAUA GCCGUUAGGC AGAGACAA G UUCAAUGA 1597 UCAUUGAA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GA GCCGUUAGGC		G	2		1	UCCCUUCAAGGA G	GCCGUUAGGC	uccees coucaseu	3U 5050
CGGGGGCA G UCUCAUUA 1591 UAAUGAGA GGA GCCGUUAGGC CUUGGACA G CUCCUGGG 1592 CCCAGGAG GGA GCCGUUAGGC AUGGAACA G CUCACAAG 1594 AUGAUGAG GGA GCCGUUAGGC GCUCACAA G UAUAUCAU 1594 AUGAUAUA GGA GCCGUUAGGC UCGAAUAA G UACAACGA 1595 UACUUGUA GGA GCCGUUAGGC AAGUACAA G UAUUCUUG 1596 CAAGAAUA GGA GCCGUUAGGC AGAGACAA G UUCAAUGA 1596 CAAGUUGAA GGA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		ย	1590			UCCCUUCAAGGA G	GCCGUUAGGC	ucceee cccceuea	A 5051
CUUGGACA G CUCCUGGG 1592 CCCAGGAG GGA GCCGUUAGGC AUGGAACA G CUCACAAG 1593 CUUGUGAG GGA GCCGUUAGGC GCUCACAA G UAUAUCAU 1594 AUGAUAUA GGA GCCGUUAGGC AAGUACAA G UACAAGGA (1595 UACUUGUA GGA GCCGUUAGGC AAGUACAA G UAUUCUUG (1596 CAAGAAUA GGA GCCGUUAGGC AGAGACAA G UUCAAUGA (1597 UCAUUGAA GGA GCCGUUAGGC CUCUUCAA G UGAAUACU (1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU (1599 AGAGUUGG GGA GCCGUUAGGC		ש	1591			UCCCUUCAAGGA G	GCCGUUAGGC	ncceee necccce	d 5052
AUGGAACA G CUCACAAG 1593 CUUGUGAG GGA GCCGUUAGGC GCUCACAA G UAUAUCAU 1594 AUGAUAUA GGA GCCGUUAGGC UCGAAUAA G UACAAGUA 1595 UACUUGUA GGA GCCGUUAGGC AAGUACAA G UAUCAUGA 1596 CAAGAAUA GGA GCCGUUAGGC AGAGACAA G UUCAAUGA 1597 UCAUUGAA GGA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		ט	1592		1	UCCCUUCAAGGA G	GCCGUUAGGC	uccege uguccaag	rg 2023
GCUCACAA G UAUAUCAU 1594 AUGAUAUA GGA GCCGUUAGGC UCGAAUAA G UACAAGUA 1595 UACUUGUA GGA GCCGUUAGGC AAGUACAA G UAUUCUUG 1596 CAAGAAUA GGA GCCGUUAGGC AGAGACAA G UUCAAUGA 1597 UCAUUGAA GGA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		G	59			UCCCUUCAAGGA G	GCCGUUAGGC	uccege uguuccau	JU 5054
UCGAAUAA G UACAAGUA1595UACUUGUA GGA GCCGUUAGGCAAGUACAA G UAUUCUUG1596CAAGAAUA GGA GCCGUUAGGCAGAGACAA G UUCAAUGA1597UCAUUGAA GGA GCCGUUAGGCCUCUUCAA G UGAAUACU1598AGUAUUCA GGA GCCGUUAGGCCAAAGGAA G CCAACUCU1599AGAGUUGG GGA GCCGUUAGGC		ט	1594			ucccuucaagga g	GCCGUUAGGC	uccege ungugaec	3C 5055
AAGUACAA G UAUUCUUG AGAGACAA G UUCAAUGA 1597 UCAUUGAA GGA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		ט	1595			ucccuucaagga g	GCCGUUAGGC	uccege unauucea	A 5056
AGAGACAA G UUCAAUGA 1597 UCAUUGAA GGA GCCGUUAGGC CUCUUCAA G UGAAUACU 1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		ט	1596			ucccuucaagga g	GCCGUUAGGC	uccees unguacuu	TU 5057
CUCUUCAA G UGAAUACU 1598 AGUAUUCA GGA GCCGUUAGGC CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		ט	2			ucccuucaagga g	GCCGUUAGGC	uccese unencucu	U 5058
CAAAGGAA G CCAACUCU 1599 AGAGUUGG GGA GCCGUUAGGC		ט	S			ucccuucaagga <u>g</u>	GCCGUUAGGC	uccege ungaagag	G 2029
		ರ	59	- 1	GCCGUUAGGC	UCCCUUCAAGGA G	GCCGUUAGGC	uccese unccunns	rg 5060

OGGETONS OGGET

UGARANDO G CACAGNUC 1601 GAUCUGUG GAA GAGGUUAGGC UCCCUUCAAGGA GCGUUAGGC UGAADANO G CRAGUCGA GAA GCGUUAGGC UCCCUUCAAGGA GCGUUAGGC UUGCACCA L BOA CAGAUCGA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC UUGCACCA G UACUCUUCA 1605 CAACAUCA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC GAUCAAAC G CACCAUCA 1606 GAAGCAGA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CAUUCACA G GO GAAGAUGA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CAUUCACA G GO GAAGAUGA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CAUUCAACA G GO GAAGUCAA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CAUCAAGA G GA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CCCUUCAAGGA GCGUUAGGC GACCAUUA G ACCAUUCA GAA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC	2821	CHGAGGAA G HCHIIIIIG	1600	CAAAAAGA GGA GCCG	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG UUCCUCAG	1G 5061	51
CUAJUCAG G CUGUUGAU 1602 AUCAACAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGAUAAG G CUGUUGAU 1603 CAGAUCGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGAUAAG G UCUGCUC 1604 CAAAUCGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAAUGAAC G UCUGCUCAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAAUGACA G CAUUCACA GAAGCAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCAACA G CAUUCACA 1608 GAAGCAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCACA G CAUUCACA 1609 GAAGCAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUCUCAAUA G CUGUACACA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC AGCCUAAUA 1613 AUUCAACA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCCUAACA G CCAUUAACA 1613 GUAUAUACA AGCCUAAG G CGAUUAGC GCCCUUAGGAC UCCCUUCAAGGA GCCGUUAGGC AGCCUUAGG G CGAUUAGC 1613 GUAUAUACA AGCCUUAGG G CCGUUAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGA AGCCUUAGG G CGAUUAGC 1613 GUAUUACAC ACCCUUCAGAGA GCCGUUAGGA	2861	ט	1601	GGA	1	UCCCUUCAAGGA		uccege cauuuuca		22
UNGAUAAG G UCGAUCUG 1603 CAGAGUCAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGACACA G UAUCUUG 1604 CAAAGAUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGACACA G UCUCCUCA 1605 CAUCAGGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAUCACACA 1607 GAAAGAGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAUCACACA 1608 UGUAGACG GCCCUUCAAGGA GCCGUUAGGC GAUCACACA 1609 UGUAGACG GCCCUUCAAGGA GCCGUUAGGC CAUUCCUC 1610 UGUAGACG GCCCUUCAAGGA GCCGUUAGGC CAUUCCUC 1610 UGUAGACG GCCCUUCAAGGA GCCGUUAGGC CAUUCCUC 1610 AUUCAACA GGAACAGA AGCUAGGA G CUGAAUAG 1611 AAUUCAG GCCCUUCAAGGA GCCCUUCAAGGA GCCGUUAGGC AGCUAGGG G CAUAAAA 1613 GUAAUACG GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC AGCUAGGG G CAUAAAA 1613 GUAAUACG GCCCUUCAAGGA GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCCUUAGGC AUGCUUU GUAACAAAU 1819 UUUCACAUC GGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC AUGCAUUAG GAAGACUAGA GC	2887	ט	1602	GGA	1	UCCCUUCAAGGA		UCCGGG CUGAAUAG	2	23
UDIGGACGA G UAUCUUUG 1604 CAAAGAUA GAA GCGUUAGGG UCCCUUCAAGGA GCCGUUAGGG GACACCUA G UCCUGAUG 1605 CAUCAGGA GAA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAUGAACA G UCCUCAUC 1606 GAADGCAGA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UAUCAACA G CACCAUUC 1607 GAAUGAGA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCACA 1608 UGAAAGUG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCACA 1609 CCUAUCACA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CACUAGA 1610 AUUCACAG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUCAAAU 1611 AUUCACAG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAAGGG G CAAUAUAC 1613 AUUUAACAG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAAGGG G CAAUAUAC 1613 GUAUUAUCA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAAGGG G CAAUAUAC 1613 GUAUUAUCA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUACAAAU GAUGAGAAA 1861 UUUUAUUCA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCAAAAU GAUGAGAAA 1871 UUUAUAUCA GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCAAAAU GAUCAUAAAA 1871 UUCACAAU GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCAAAAU<	2899	ט	1603	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CUUAUCAA		064
GACACCUA G UCCUGANG 1605 CAUCAGGA GGA GGA GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAUGAAAC G UCUGCUCC 1606 GAANGCAGA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCCUG G CAUUCACA 1607 GAANGGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCCUG G CAUUCACA 1609 UUUGAAUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGUCAAUA 1610 AUUGACAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC AUGUCAAUA 1611 GCCUUAGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUCAAUA 1612 AUUGACAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUCAAUA 1613 GAUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAAUAAC 1613 GAUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAAUAAC 1614 UAUAUUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAAUAAC 1615 UUUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAAUAAC 1614 UUUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAAUAAC 1815 UUUUAUACG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCACACAU GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCUUAAA	2935	O	1604	GGA	1	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG UCGUGCAA	Ω	ις Γ
CANDIGADAC 1606 GABAGCAGA GAB GCCGUUAGGC UCCCUUCAAGAGA GCCGUUAGGC UAUCAACA CACCAUUC 1607 GABUGGGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGUCGAA 1608 UGUGAAUG GACCUUACAGG GCCGUUAGGC GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGC UCCCUUCAAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGG	2978	ט	1605	GGA	SUUAGGC	UCCCUUCAAGGA		UCCGGG UAGGUGUC	2	990
UNDUCAACA G CACCAUUC 1607 GAAUGGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUUCCAAGGA CCCUUCAAGGA GCCGUUAGGC CAUUCAAGGA GCCGUUAGGC CAUCCUUCAAGGA GCCGUUAGGC CAUCCAUCAAGGA GCCGUUAGGC CAUCCAUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCCUUCAAGGA GCCCUUCAAGG	2991	ט	1606	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG GUUUCAUC		22
CAUUCCUG G CAUUCACA 1608 UGUGAAUG GA GCGUUAGGC UCCCUUCAAGGA GCGUUAGGC AUGUGGAA G UGGAUAGG 1609 CUAUUCA GA GCGUUAGGC UCCCUUCAAGA GCGUUAGGC AUGUGGAA G UGGUUCAAGA 1610 AUGACAG GAA GCCGUUAGGC UCCCUUCAAGA GCGCGUUAGGC UGUCAAUA G CUAGAUU 1611 AUGACAG GAA GCCGUUAGGC UCCCUUCAAGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 AAAUUCAG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAAAA 1615 UUUUAUCG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUACAAAU 1868 AUUUGUAC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCACAAUG G GAAUUACA 1868 AUUUGUAC GAA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUCACAAUG G GAAUUACA 1868 AUUUGUAC GAA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUCACAAUG G GAAUUACA 1873 UUCACACUC GAA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUCACAUC GAAUUACA 1873 AUGCUCC GAA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUCACAUC GAAUUACA 1873 AUGCUCC GAA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUCACAUCA	3023	ט	1607	GGA		UCCCUUCAAGGA	1	UCCGGG	\dashv	80
AUGUGGAA G UGGAUAGG GCCUAUCCA GGA GCCGUUAGGC UCCAUUCAAGGA GCCGUUAGGC GAACUGCA G CUGUCAAU 1610 AUUGACAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUCCAAUA G CUGUAGGC 1611 GCCCUAGG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CQAUAUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAAC 1614 UADAUGCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGAGA G CGAUACAAU 1868 AUUUGUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCAAAU G AUGUGGAA 1870 UUCCACAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCAAAUG G AUGUGGA 1871 UUUAUUAU GACGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGAAGUG G AAUAUAUA 1871	3035	ט	1608	GGA		UCCCUUCAAGGA	GCCGUUAGGC	- 1	2	60
GAACUGCA G CUGUCAAU 1610 AUUGACAG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUCAAUA G CCUAGGGC 1611 GCCCUAGG GGA GCCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC AGCCUAGG G CUAAUAU 1612 AAAUUCAG GGA GCGGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUACAAU G GAACAAUA 1869 UUCACACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGAA 1870 UUCACACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGAA 1871 UUAUAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGAA 1871 UUAUAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCUUUAA G GAGCAUG 1872 AUUAUAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCUUUAA G GAGCAUG 1873 AUGCUCC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCUUAAGG G GAGCAUG 1874 CAUGCUCC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCUAAAUG GAGCAUGA TAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUCUA	3063	ט	1609	GGA		UCCCUUCAAGGA	GCCGUUAGGC	- 1	2	070
UGUICAAUA C CUAGGGC 1611 ACCCUAGG GGA GCGUUAGGC UCCCUUCAAGGA GCGUUAGGC AGCCUAGG G CUGAAUUU 1612 AAAUUCAG GGA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC UGUAGGG G CAGUUAGC GAA GCCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UGUAGGGG G CAGUUAGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUACAAU G GAGUAAAAU 1863 AUUUGUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAUU G GAGAAAAU G GAGCAUAAGC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAUG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAUG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAUG GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAUG GA GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUUUAA G GAGCAUA GA GCCGUU	3081	Ö	1610	GGA		UCCCUUCAAGGA	GCCGUUAGGC		5	071
AGCCUNGG G CUGAAUUU 1612 AAAUUCAG GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGGG G CGAUAUAC 1614 UAAAUGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAAAA 1614 UAAAUGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAAAA 1861 UUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUACAAU G GAUGUGGA 1868 AUUUGUCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAU G GAUGUGGA 1870 UUCACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAUG AUUAUAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGGAUGUG 1871 UUAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGUUUAA G GGGGCAUG 1873 AUUCUCCC UUGUUUAAG G GAGCAUGA 1874 CAUGCUC UUUUAAGGG G AGCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGGG G AGCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUUAAG G GAGCAUGA 1874 UUCAUCCC UUUAAGGC G AGCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAG G AGCGUU	3091	ט	1611	GGA		UCCCUUCAAGGA	t		5	072
UGUNAGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAUAC 1613 GUAUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGG G CGAUAAAA 1614 UAAAUGUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUAGGGG G CGAUAAAA 1615 UUUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUUU G GUACAAAU 1868 AUUUGUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGA 1870 UUCCACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGA 1871 UUAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGGAUGUG G AAUAUAA 1872 AUUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGGUUUAAG G GAGCAUGA 1873 AUUACUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAAGG G GAGCAUGA 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAAGG G GAGCAUGA 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGGG G AGCAUGAA 1875 UUCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA 1876 UUCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA 1877 CAACACCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA GACGUUAGC	3098	ט	1612	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	2	73
UGUNAGGGG CGANUAUAC 1613 GUANAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUANDAUA 1614 UAAAUGUA GGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UGUAGGGG CGAUAAAA 1868 AUUUGUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUACAAAU GAUGUGGA 1869 UCCACAU GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG GAUGUGGA 1870 UUCCACAU GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGAUGUA GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC UUGUUUAA G GGAGCAU 1872 AUUAUAUU GA GCCGUUAGGC GCCG	3189	ט	1613	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	2	074
UGUADADAD 1614 UAAAUGUA GGA GCGUUAGGC UCCUUCAAGGA GCGGUUAGGC UGUADADAD 1615 UUUUAUCG GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC AUGCUUUU G GACAAAU 1868 AUUUGUAC GGA GCGGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UACAAAUG G AUGUGGAA 1870 UUCCACAU GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UACAAAUG G AUGUGGAA 1871 UUUCACAU GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UGGAUGUG G AUGUUAA 1872 AUUAUAUU GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UUGUUUAA G GGGGCAU 1873 AUGCUCC GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UUGUUUAAG G GAGCAUGA 1874 CAUGCUC GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UUUUAAGG G AGCAUGAA 1875 UCCAUGCC GGA GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC GUUUAAGG G AGCAUGAA 187 UUCAUGCUC	3242	ט	1613	GGA		UCCCUUCAAGGA	GCCGUUAGGC	- 1	+	74
UGUNAGGG G CAGUNAAAA 1615 UUUUAUCG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUUU G GUACAAAU 1868 AUUUGUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAU G GAUGUGGAA 1870 UUCCACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGAA 1871 UUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGGAUGUG G AAUAUAAA 1872 AUUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGUUUAAG G GGGACAUG 1873 AUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUGUUAAG G GAGCAUGA 1873 AUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGGG G AGCAUGA 1875 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUUAAG G GAGCAUGA 1878 UUCAUCCA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUUAAGG AGCAUAGCA	3210	ט	1614	GGA	BUUAGGC	UCCCUUCAAGGA	1	- 1	2	75
AUGCUUUU G GUACAAAU 1868 AUUUGUAC GGA GCGGUUAGGC UCCCUUCAAGGA GCGGUUAGGC GCGGUUAGGC GCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACAAAUG G AUGUGGAA 1870 UUCCACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGAUGUAAG G GGAGCAUG 1873 AUUCAUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CACCAGCU 1881 AAGCAUGAA G GCACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCUUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCUUCAACAC GGA GCCGUUAGGC UCCCUUCAACAC GGA GCCGUUAGGC CCCUUCAACAC GGA GCCGUUAGGC CCCUUCAACAC GGA GCCGUUAGGC CCCUUCAACAC GGA GCCGUUAGGC CCCUUCAACAC GCCGUUAGGC CCCUUCAACAC GCACACUCAACAC GGA GCCGUUAGGC CCCUUCAACAC GCCCUUCAACAC GCCCUUACACAC GCACACACAC GGA GCCGUUAGGC CCCUUCAACAC	3279	ט	61	GGA		UCCCUUCAAGGA	- 1	UCCGGG	2	920
GUACAAAU G GAUGUGGAA UACCACAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UACCACAUG G AAUAUAAA 1871 UUAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGGAUGUG G AAUAUAAA 1872 AUUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGGAUGUG G AAUAUAAA 1873 AUGCUCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUUAAGG G GAGCAUG 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGGG G AGCAUGAA 1875 AUGCUCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGGG G AGCAUGAA 1875 UCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUUUAAGG G AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G AGCAUGAA 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGAG 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGAG 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCAUCAACA G GCCAUAACC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCAUCAACA G GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCCGUUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCCGUUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAAGA G GCCGUUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAGA G GCCGUUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAGA G GCCGUUAGCC GGA GCCGUUAGGC CCCUUCAACCCG GCCGUUAGCC CAGCUCACCACCACCACCACCACCACCACCACCACCACCACCA	14	ט	86	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	2	77
UNCCADADUG G AUGUGGAA 1870 UUCCACAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGAUGU G GAAUAUAA 1871 UUDAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGAUGUG G AAUAUAAU 1872 AUUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGUUUAAG G GGAGCAUG 1873 AUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCUUUAAG G GGAGCAUGA 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUUUAAGG G AGCAUGAA 1875 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGG G AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGG G AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUGUUGA GUUAUGUC GAACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGCAUCA GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGAC GCACUUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGC GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGC GCACUUAGCC GGA GCCGUUAGGC CAGCUUAGC GCACUUACCCUUCAACGA GCCGUUA	23	ט	1869	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	2	078
AUGGAUGU G GAAUAUAA 1871 UUAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGGAUGU G AAUAUAAU 1872 AUUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGUUUAA G GGAGCAUG 1873 AUGCUCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGUUUAAG G GAGCAUGA 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGG G GAGCAUGA 1875 UCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGG G AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGA 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGA 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA 1880 AGCUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA GACAGAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA GCAGUUAGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA GCAGUUAGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA GCAGC	24	ט	1870	GGA		UCCCUUCAAGGA	GCCGUUAGGC		5	79
UGGAUGUG AAUAUAAU 1872 AUUAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUGUUUAA G GGGAGCAU 1873 AUGCUCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC GUUUAAGG G AGCAUGAA 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC GUUUAAGG G AGCAUGAA 1876 UCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA G GUUAUGUC 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUGUUGA G GUUAUGUC 1879 GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC AAGCAUCU G GCACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC AAGCAUGA G GCACAGC GGA GCCGUUAGGC	29	ט	87	GGA	1	UCCCUUCAAGGA		UCCGGG	-	80
UUGUUUAA G GGGAGCAU 1873 AUGCUCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGUUUAAG G GGAGCAUG 1874 CAUGCUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAGG G AGCAUGAA 1875 UCAUGCUC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA 1876 UUCAUGCU GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA 1877 CAACACC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAUGA G GUGUUGAG 1878 CUCAACAC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUGUUGA G GUUAUGGC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	3.0	ט	1872	GGA	BUUAGGC	UCCCUUCAAGGA		UCCGGG CACAUCCA		81
UGUUUAAG G GGAGCAUG 1874 CAUGCUCC GGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC GUUUAAGG G AGCAUGAA 1875 UCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGAG 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUGUUGA G GUUAUGUC 1880 AGCUGUGC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGCAUGA G GCACUAGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGCAUGA G GCACAGCU 1880 AGCUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CAGCUGAA G GCACAGCU 1881 CCAUCUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCGUUAGGC CAGCUGAA G GCAGUAGC GAACAGC GGA <td< td=""><td>28</td><td>ט</td><td>87</td><td>GGA</td><td></td><td>UCCCUUCAAGGA</td><td>GCCGUUAGGC</td><td>UCCGGG UUAAACAA</td><td>\neg</td><td>82</td></td<>	28	ט	87	GGA		UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG UUAAACAA	\neg	82
GUUUDAGGG G AGCAUGAA 1875 UCAUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUDAGGG G AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G AGUGUUGA 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGAG 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUGUUGA G GUGUUGAG 1880 AGCUGUGC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCACAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCACAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCGGUUAGGC CAGCUGAA G GCAGAUGC GGA GCCGUUAGGC UCCCUUCAACAGGA GCGGUUAGGC CAGCUGAA	59	UGUUUAAG G GGAGCAUG	87	GGA	BUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG		83
UUUDAAGGG G AGCAUGAA 1876 UUCAUGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGCAUGAA G AGGUGUUG 1877 CAACACCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAUGAAGA G GUGUUGAG 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUGUUGA G GUUAUGUC 1880 AGCUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGCAUCU G GCACAGCU 1881 CCAUCUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGG 1881 CCAUCUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGAAGGCA G AUGGAAAU 1882 AUUUCCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUU 1883 AAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	09	r	87	GGA	1	UCCCUUCAAGGA	GCCGUUAGGC	1	20	84
AGCAUGAA G AGGUGUUG CAUGAAGA G GUGUUGAG CAUGAAGA G GUGUUGAG GGUGUUGAG G GUGUUGAG GGUGUUGA G GUUAUGUC 1879 GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGCAUCU G GCACAGCU 1880 AGCUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCACAGCU CAGCUGAA G GCACAGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGG 1881 CCAUCUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGAAGGCA G AUGGAAAU 1882 AAUUCCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	61	ט	87	GGA		UCCCUUCAAGGA		UCCGGG CCCUUAAA	-	85
CAUGAAGA G GUGUUGAG 1878 CUCAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGG GAACCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCAGCUGAA G GCAGAUAGG GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAAGCAGA G GCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGAAGAU G GAAAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAAGCAGAU G GAAAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	70	ט	1877	GGA	BUUAGGC	UCCCUUCAAGGA		UCCGGG UUCAUGCU	\exists	5086
GGUGGUGA G GUUAUGUC 1879 GACAUAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGCAUCU G GCACAGCU 1880 AGCUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAAAGGA GCGUUAGGC AGCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAAAUAGUU 1883 AAUAUUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	72	ט	1878	GGA	GUUAGGC	UCCCUUCAAGGA		UCCGGG	1	5087
AAGCAUCU G GCACAGCU 1880 AGCUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUGAA G GCAGAUGG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGAAGAAU 1882 AAUAUUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUU 1883 AAUAUUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	80	ט	87	GGA	GUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	+	5088
CAGCUGAA G GCAGAUGG 1881 CCAUCUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGCUUCAAGGA GCCGUUAGGC AGGAAGAAU 1882 AAUTUCCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	97	ರ	88	GGA		UCCCUUCAAGGA		UCCGGG	\dashv	5089
UGAAGGCA G AUGGAAAU 1882 AUUUCCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AGGCAGAU G GAAAUAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	109	ט	1881	GGA	GUUAGGC	UCCCUUCAAGGA	- 1			5090
AGGCAGAU G GAAAUAUU 1883 AAUAUUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	113	ט	00	GGA	GUUAGGC	UCCCUUCAAGGA		UCCGGG	20	91
	116	ŋ	ω	GGA	GUUAGGC	UCCCUUCAAGGA		UCCGGG AUCUGCCU	20	92

DOGETALS CADDA

117	GGCAGAUG G AAAUAUUU	1884	AAAUAUUU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUCUGCC	5093
143	CAAUUUGA G ACUAAGAU	1885	AUCUUAGU GGA GCC	GCCGUUAGGC	GCCGUUAGGC UCCGGG	50
149	GAGACUAA G AUAUUGUU	1886	AACAAUAU GGA GCC	GCCGUUAGGC	ucccurcaagaa gccguuaggc uccggg uuagucuc	5095
175	CUAUUGAA G ACAAGAGC	1887	GCUCUUGU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCAAUAG	3 5096
180	GAAGACAA G AGCAAUAG	1888	CUAUUGCU GGA GCC	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg uugucuuc	5097
201	ACACAUCA G GUCAGGGG	1889	CCCCUGAC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGAUGUGU	J 5098
206	UCAGGUCA G GGGGUUAA	1890	UNAACCCC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACCUGA	A 5099
207	CAGGUCAG G GGGUUAAA	1891	UUVAACCC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUGACCUG	3 5100
208	AGGUCAGG G GGUUAAAG	1892	CUUUDAACC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUGACCU	J 5101
209	GGUCAGGG G GUUAAAGA	1893	UCUUUDAAC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCUGACC	5102
216	GGGUUAAA G ACCUGUGA	1894	UCACAGGU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUUAACCC	5103
245	GAUAAGUU G GAAACGUG	1.895	CACGUUUC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG AACUUAUC	5104
246	AUAAGUUG G AAACGUGU	1896	ACACGUUU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAACUUAU	J 5105
286	UAUAUAAU G GUAAAGAA	1897	UUCUUUAC GGA GCC	GUUAGGC	GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUUAUAUA	4 5106
292	AUGGUAAA G AAAGACAC	1898	GUGUCUUU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUUACCAU	J 5107
296	UAAAGAAA G ACACCUUC	1899	GAAGGUGU GGA GCC	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg uuucuuua	A 5108
324	UUUCCAAA G AGAGGAAU	1900	AUUCCUCU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUUGGAAA	A 5109
326	UCCAAAGA G AGGAAUCA	1901	UGAUUCCU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCUUUGGA	A 5110
328	CAAAGAGA G GAAUCACA	1902	UGUGATUC GGA GCC	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg ucucuuug	3 5111
329	AAAGAGAG G AAUCACAG	1903	CUGUGAUU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUCUCUUU	J 5112
337	GAAUCACA G GGAGAUGU	1904	ACAUCUCC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGUGAUUC	2 5113
338	AAUCACAG G GAGAUGUA	1905	UACAUCUC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUGUGAUU	J 5114
339	AUCACAGG G AGAUGUAC	1906	GUACAUCU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUGUGAU	J 5115
341	CACAGGGA G AUGUACAG	1907	CUGUACAU GGA GCC	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg ucccugug	3 5116
354	ACAGCAAU G GGGCCAUU	1908	AAUGGCCC GGA GCC	GCCGUUAGGC	- 1	J 5117
355	CAGCAAUG G GGCCAUUU	1909	AAAUGGCC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUUGCUG	3 5118
356	AGCAAUGG G GCCAUUUA	1910	UAAAUGGC GGA GCC	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg ccauugcu	J 5119
366	CCAUTURA G AGUUCUGU	1911	ACAGAACU GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUAAAUGG	3 5120
400	ACCUUCUA G AAGGGCC	1912	GGCCCUU GGA GCC	GCCGUUAGGC	GCCGUUAGGC	
403	UUCUAGAA G GGGCCCUG	1913	CAGGGCCC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCUAGAA	
404	UCUAGAAG G GGCCCUGA	1914	UCAGGGCC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUUCUAGA	A 5123
405	CUAGAAGG G GCCCUGAG	1915	CUCAGGGC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUUCUAG	512
442	ACAACAAU G GCUAUGAA	1916	UUCAUAGC GGA GCC	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUUGUUGU	J 5125

451	GCUAUGAA G GCAUUGUC	1917	GACAAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCAUAGC	5126
484	AUGUGCCA G AAGAUGAA	1918	UUCAUCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGGCACAU	5127
487	UGCCAGAA G AUGAAACA	1919	UGUUUCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCUGGCA	5128
513	CAAAUAAA G GACAUGGU	1920	ACCAUGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUUAUUUG	5129
514	AAAUAAAG G ACAUGGUG	1921	CACCAUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUUUAUUU	5130
519	AAGGACAU G GUGACCCA	1922	UGGGUCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUCCUU	5131
528	GUGACCCA G GCAUCUCU	1923	AGAGAUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGGGUCAC	5132
556	AAGCUACA G GAAAGCGA	1924	UCGCUTUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGUAGCUU	5133
557	AGCUACAG G AAAGCGAU	1925	AUCGCUUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUGUAGCU	5134
605	UGAAACAU G GAAGACAA	1926	UNGUCUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUGUUUCA	5135
909	GAAACAUG G AAGACAAA	1927	UNUGUCUN GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUGUUUC	5136
609	ACAUGGAA G ACAAAGGC	1928	GCCUTUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCCAUGU	5137
615	AAGACAAA G GCUGACUA	1929	UAGUCAGO GGA GCCGUUAGGO UCCCUUCAAGGA GCCGUUAGGO UCCGGG UUUGUCUU	5138
629	CUAUGUGA G ACCAAAAC	1930	GUUUUGGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCACAUAG	5139
642	AAACUUGA G ACCUACAA	1931	UNGUAGGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCAAGUUU	5140
999	GAUGUUCU G GUUGCUGA	1932	UCAGCAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AGAACAUC	5141
889	CUCCUCCA G GUAAUGAU	1933	AUCAUUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGGAGGAG	5142
714	ACUGAGCA G AUGGGCAA	1934	UNGCCCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGCUCAGU	5143
717	GAGCAGAU G GGCAACUG	1935	CAGUUGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUCUGCUC	5144
718	AGCAGAUG G GCAACUGU	1936	ACAGUUGO GGA GCOGUUAGGO UCCOUUCAAGGA GCOGUUAGGO UCCGGG CAUCUGCU	5145
727	GCAACUGU G GAGAGAAG	1937	CUUCUCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG ACAGUUGC	5146
728	CAACUGUG G AGAGAAGG	1938	CCUUCUCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CACAGUUG	5147
730	ACUGUGGA G AGAAGGGU	1939	ACCCUUCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCCACAGU	5148
732	UGUGGAGA G AAGGGUGA	1940	UCACCCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCUCCACA	5149
735	GGAGAGAA G GGUGAAAG	1941	CUUUCACC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUCUCUCC	5150
736	GAGAGAAG G GUGAAAGG	1942	CCUUUCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUUCUCUC	5151
743	GGGUGAAA G GAUCCACC	1943	GGUGGAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUUCACCC	5152
744	GGUGAAAG G AUCCACCU	1944	AGGUGGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUUUCACC	5153
772	UCAUUGCA G GAAAAAG	1945	CUUUUUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGCAAUGA	5154
773	CAUUGCAG G AAAAAGU	1946	ACTUTUTUTO GGA GCCGUTAGGC UCCCUUCAAGGA GCCGUTAGGC UCCGGG CUGCAAUG	5155
793	CUGAAUAU G GACCACAA	1947	UNGUGGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG AUAUUCAG	5156
794	UGAAUAUG G ACCACAAG	1948	CUUGUGGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUAUUCA	5157
802	GACCACAA G GUAAGGCA	1949	UGCCUUAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UUGUGGUC	5158

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807	CAAGGUAA G GCAUUUGU	1950	ACAAAUGC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	3GG UUACCUUG	5159
824	ccaugagu g ggcucauc	1951	GAUGAGCC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	3GG ACUCAUGG	5160
825	CAUGAGUG G GCUCAUCU	1952	AGAUGAGC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	see cacucaue	5161
839	UCUACGAU G GGGAGUAU	1953	AUACUCCC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	see aucenaga	5162
840	CUACGAUG G GGAGUAUU	1954	AAUACUCC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	uccege caucenae	5163
841	UACGAUGG G GAGUAUUU	1955	AAAUACUC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	uccege ccauceua	5164
842	ACGAUGGG G AGUAUUUG	1956	CAAAUACU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	agg cccaucgu	5165
870	AAUGAUGA G AAAUUCUA	1957	UAGAAUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	see ucaucauu	5166
889	UAUCCAAU G GAAGAAUA	1958	UAUUCUUC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GGG AUUGGAUA	5167
890	AUCCAAUG G AAGAAUAC	1959	GUAUUCUU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	UCCGGG CAUUGGAU	5168
893	CAAUGGAA G AAUACAAG	1960	CUUGUAUU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GGG UUCCAUUG	5169
908	AGCAGUAA G AUGUUCAG	1961	CUGAACAU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	ggg UNACUGCU	5170
919	GUUCAGCA G GUAUUACU	1962	AGUAAUAC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GGG UGCUGAAC	5171
928	GUAUUACU G GUACAAAU	1963	AUUUGUAC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GGG AGUAAUAC	5172
945	GUAGUAAA G AAGUGUCA	1964	UGACACUU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	uccege unuacuac	5173
954	AAGUGUCA G GGAGGCAG	1965	CUGCCUCC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	uccege ugacacuu	5174
955	AGUGUCAG G GAGGCAGC	1966	GCUGCCUC GGA	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg	ggg cugacacu	5175
926	GUGUCAGG G AGGCAGCU	1967	AGCUGCCU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	ggg ccugacac	5176
958	GUCAGGGA G GCAGCUGU	1968	ACAGCUGC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	uccege ucccueac	5177
977	CACCAAAA G AUGCACAU	1969	AUGUGCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	ucceee uuuueeue	5178
1000	AAGUUACA G GACUCUAU	1970	AUAGAGUC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	uccees usuaacuu	5179
1001	AGUUACAG G ACUCUAUG	1971	CAUAGAGU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GGG CUGUAACU	5180
1015	AUGAAAAA G GAUGUGAG	1972	CUCACAUC GGA	GCCGUUAGGC	ucccuucaagga gccguuaggc uccggg	GGG UUUUUCAU	5181
1016	UGAAAAAG G AUGUGAGU	1973	ACUCACAU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	UCCGGG CUUUUUCA	5182
1044	UCCCGCCA G ACGGAGAA	1974	UVCUCCGU GGA	GCCGUUAGGC	ucccuucaagga gccguuaggc ucc	UCCGGG UGGCGGGA	5183
1047	CGCCAGAC G GAGAAGGC	1975	GCCUUCUC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	ucceee encueece	5184
1048	GCCAGACG G AGAAGGCU	1976	AGCCUUCU GGA	GCCGUUAGGC	ucccuncaagga gccguuaggc uccggg	aga cancuaga	5185
1050	CAGACGGA G AAGGCUUC	1977	GAAGCCUU GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCCGGG	eee nccencne	5186
1053	ACGGAGAA G GCUUCUAU	1978	AUAGAAGC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	ucceee uucucceu	5187
1105	UCUGUACA G AACAAAAC	1979	GUUUUGUU GGA	GCCGUUAGGC	1	UCCGGG UGUACAGA	5188
1123	ACAACAAA G AAGCUCCA	1980	UGGAGCUU GGA	GCCGUUAGGC	ı	ucceee unnennen	5189
1169	AAGCACAU G GGAAGUGA	1981	UCACUUCC GGA	GCCGUUAGGC	UCCCUUCAAGGA GCCGUUAGGC UCC	UCCGGG AUGUGCUU	5190
1170	AGCACAUG G GAAGUGAU	1982	AUCACUUC GGA	GCCGUUAGGC	GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	GGG CAUGUGCU	5191

UNDAAGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GUGGUUUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG GUGGUUUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UCUCUUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CAUGCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCAUGCUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCAGUCGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCAGCGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCAGCACC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCAGGAC GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCAGGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCCAGGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGGGUCCCGGG CCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGGGUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGGGUAGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGGGGGGGCCCCCCCCGGGGGCCCCCCCCCGCGCGCGCCCC
GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC UCCCU
GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC UCCCU
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GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC
UGGACGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC

UCAGGAGO G ACCOUCADA 2016 AUGARACO GAR GECGUIDAGGE UCCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCUUCAAGGA GECGUIDAGGE UCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE UCUUCAAGGA GECGUIDAGGE UCCUUCAAGGA GECGUIDAGGE CUCUUCAAGGA GECGUIDAGGE CUCUUCAAGGA GECGUIDAGGE GECGUIDAGGE CUCCUUCAAGGA GECCUIDAGGA GECCUIDAGGA GECCUIDAGGE CAGAGCCUAG GAGGCCUUCA GAA GECGUIDAGGE CAGAGCCUA GAAGGCCUAGA GAGCCUUCAAGGA GACCUUCAGA GAGGC			-	THE RECEIPTING TICCONTINGA GCCGUUAGGC UCCGGG	CCUCCUGA	5225
UCUGCAGE G GGCUUCGA 2017 UCCAAAGC G3A GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCCUUAGGC GAACACACCUUAGGA GCCCUUAGGC GAACACACACCUUCAAGGA GCCCUUAGGC GAACACACACCUU	16	ט	2016	GGA GCCGUUAGGC UCCCGCCGCGCGCGCGCGGGGG UCCGGGG	GCUGCAGA	5226
CUGCAGGG G GCUUCGAU 2019 GUADAAGG GSA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUCAAGGA GCCGUUAGGC UCCGUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC CUAACACUUCAAGA GCCCUUAGGC GAACCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGA GCCGUUAGGC UCCUUCAAGA GCCGUUAGGC UCCUUCAAGA GCCGUUAGGC CUCCUUCAAGA GCCGUUAGGC CUCCUUCAAGA GCCGUUAGGC CUCCUUCAAGA GCCCUUAGGC CAACCUUAGGC CAACCUUCAAGA GCCCUUAGGC CAACCUUAGGC CCCUUCAAGA GCCCUUAGGC CAACCUUAGGC CAACCUUAGGC CAACCUUCAGA GCCCUUAGGC CAACCUUAGGA GCCCUUAGGC CAACCUUAGG GCCCUUAGGC CAACCUUAGG G	13		2017	GGA GCCGUUAGGC UCCCGGCTTTCAAGGA GCCGUUAGGC UCCGGG	CGCUGCAG	5227
CUUCGAUC G GCAUUNAC 2019 GIPAANGC GNA GCGGUUAGGC CUCCGAUC UGUGGAUU G GAGAUUNAC 2020 AUUUCUUC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUUGGAA G AAAAAAUA 2021 AUUUCUUC GAA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC AUUGGAA G AAAAAAAA 2023 UUCAGAUC GAACCUUCAAAGGA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC UCCCUUCAAAGGA GCCGUUAGGC UCCCCUUCAAAGGA GCCGUUAGGC UCCCUUCAAAGGA GCCGUUAGGC UCCCUUCAAAGAA CCCGUUAGGC UCCCUUCAAAACAA 2023 UUUGUUUC GAA GCGGUUAGGC UCCCUUCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	14	CUGCAGCG G GCUUCGAU	2018	GGA GCCGUUAGGC UCCCOOCCANGON GCCGUUAGGC UCCGGG	GAUCGAAG	5228
UGUGANUN G GAAGAAN 2020 AUUUCUUC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGA GCCCUUCAAGA GCCGUUAGGC CCCUUCAAGA GCCCUUCAAGA GCCCUUCAAGA GCCCUUCAAGA GCCCUUCAAGA GCCCUUCAAGA GCCCUUCAAGA GCCCUUCAACAC GACCCUUCAACA GACCCCUUCAACAC GACCCUUCAACA GACCCCUUCAACA GACCCCUCAA	24	ט	2019	GGA GCCGUUAGGC UCCCUUCAACAA GCCGUUAGGC UCCGGG	UAAUCACA	5229
GUGAUUAG G AAGAANJA 2021 UAUUUCUU GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCAACUGAA GCAACUUAGGC UCAACUGAA GCAACUUAGGC UCAACUGAA GCAACUUAGGC UCAACUGAA GCAACUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCAACUGAA GCAACUAGGA GCCGUUAGGC UCAACUGAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAA GCAACUCAAAAA GCAACUCAAAAAA GCAACUCAAAAAAAAAA	41	ט	2020	GGA GCCGUOAGGC UCCCUOCCATIONS GCGGUUAGGC UCCGGG	CUAAUCAC	5230
AUUAGGAA G AAAUAUCC 2022 GGAUAAUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCACUGAA GCA AUCUGAAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUCAAGGA GCCGUUAGGC UCCUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCCUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCCUUAGGC UCCUUCAAGGA GCCCUUAGGC UCCUUCAAGGA GCCCUUAGGC UCCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC UCCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CCCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CCCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CCCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CAGCCUUAGGC CACCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CACCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CACCUUAGGC CACCUUAGGC CACCUUCAAGGA GCCCUUAGGC CAGCCUUAGGC CACCUUCAAGGA GCCCUUAGGC CACCUUCAAGGA GCCCUUCAAGGA GCCCUUAGGC CACCUUCAAGGA GCCCUUAGGC CACCUUCAAGGA GCCCUUAGGC CACCUUCAAGGA GCCCUUAGGC CACCUUAGGC CACCUUAGGC CACCUUAGGC C	42	ט	2021	GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG	UUCCUAAU	5231
CAACUGAUG GAUCUGAAA 2023 UUCAGAAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CUCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUAUAAGGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UUUUAAGGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUUAACGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUUAAAGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUUAAAGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUUAAACGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAAGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAAGA G GUCCAUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAAGA G GUCCAUUA GGA GCCGUUAGGC UCCCUUCAAAGA G GUCCAUUCA GGA GCCGUUAGGC UCCCUUCAAAGA G GUCCAUUAGGC GA GCCGUUAGGC UCCCUUCAAAGA G GUCCCUUCAAAGA G GUCCCUUCAAAGA G GCCCUUAGU G GCCCUUAGGC GA GCCGUUAGGC UCCCUUCAAAGA GCCCUUAGAG GCCCUUAGAG G GCCCUUAGA G	45	AUUAGGAA G AAAUAUCC	2022	GGA GCCGOOAGGC OCCCOCCINICAAGGA GCCGOOAGGC UCCGGG	AUCAGUUG	5232
AACUGANUG G AUCUGABA 2024 UUUCAGAN GAB GCCGUUDAGG COCCUUCAAGGA GCCGUUDAGGC UGCUGAGG GAUGGGGA 2025 UCCCCAUC GAB GCCGUUDAGGC UCCCCUUCAAGGA GCCGUUDAGGC UGCGGAGG GAUGGGAA 2026 UUCCCCAUC GAB GCCGUUDAGGC UCCCUUCAAGGA GCCGUUDAGGC UGACGAUG GABAGACA 2028 UUGUCUUC GAB GCCGUUDAGGC UCCCUUCAAGGA GCCGUUDAGGC ACGGAUGG GAAGACAA 2029 UUGUCUUC GAB GCCGUUDAGGC UCCCUUCAAGGA GCCGUUDAGGC CGGAUGGG AAGACACC 2030 GUUGUCUUC GAB GCCGUUDAGGC UCCCUUCAAGGA GCCGUUDAGGC CCBAUGGGA GACGCUUC GAB GCCGUUDAGGC UCCCUUCAAGGA GCCGUUDAGGC CCCGUUDAGGC CCCCUUCAAGGC	19	CAACUGAU G GAUCUGAA	2023	GGA GCCGUOAGGC OCCCGCCGCGCGCGCGCGCGGGGGC UCCGGGG	CAUCAGUU	5233
CUGCUGAC G GANGGGGA 2025 UCCCCANO GAS GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGCCUUCAAGGA GCCGUUAGGC UGCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCUUAAAGU G GUGCUUUA 2033 UAAAGCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCUUAAAGU G GUGCCUUU A 2033 UAAAGCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGA GCCGUUAGGA GC	62	ט	2024	GGA GCCGUUAGGC UCCCGCGTTTCAAGGA GCCGUUAGGC UCCGGG	GUCAGCAG	5234
UGCUGARGE G AUGGGGAA 2026 UUCCCCAN GAA GCCUURAGG CCCUULCAAGGA GCCGUUAGGC UGACUGARG 2027 GUCUUCCC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC ACGGAUGG G AAGACAAA 2029 UUGUUUCC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC ACGGAUGG G AAGACAAA 2029 UUGUUUUC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGGGAAA 2029 UUGUUUUC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGGACAAC 2031 AAAGCACC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAACGA G GUGCUUUA 2033 UAAAGCAC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAAACGA G GUGCCUUA 2034 UGUUUGAC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACAAAAGU G GGCCCUUC 2035 UAAUGGAC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC G GUCCCUUC G GCCCUUC	84	ט	2025	GGA GCCGUDAGGC GCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	CGUCAGCA	5235
UGACGGAU G GGGAAGAC 2027 GUCUUCC GAA GCGGUUAGGC UCCCUUCAAGGA GCGUUAGGC GACGGAUG G GAAGACA 2029 UGUCUUCC GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC ACGGAUGG G AAGACAAC 2031 AGUGUCUU GAGGCUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCGAUGGG G AAGACACU 2031 AGUGUUCU GAGCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCGAUGGG G ACGACACU 2031 AAAGCACC GAAGCACC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAACGA G GUCAAACA 2031 UGUUUGAC GAAGCAC GAAGCAC GAAGCAC GAAGGAC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAACGA G GUCAAACA 2031 UGUUUGAC GAAGGAC GAAGGAC GCCGUUAGGC GCCGUUAGGC GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA CCCUUCAACACA GCCGUUAGCC CCCUUCAACACA	85	ש	2026	GGA GCCGUDAGGC GCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	AUCCGUCA	5236
ACGGAUGG G GAAGACAA 2029 UGUCUUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC C CGGAUGGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC C CGGAUGGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCGCUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCGCUUAGGC GCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC CCGCUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGA GCCGUUAGCC CAAAGACC GAACACCU GAA GCCGUUAGGC CCCUUCAAGA GCCGUUAGGC CCCUUCAAGA	88	ט	2027	GUCUUCCC GGA GCCGUUAGGC UCCCGCCCAACGGA GCCGUUAGGC UCCGGG	CAUCCGUC	5237
ACGGAUGGG G GAAGACAA 2029 UUGUCUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC C GGAUGGGA G GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCCUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGCUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGCUUAGGC GA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGCUUAGGC GCGUUAGGC GCGCUUAGGC GCGCUUAGGC GCGCUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCGCUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCGCUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC GCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGAGA GCCGUUAGAGA GCCGUUAGAGA GCCGUUAGCC GAA	89	GACGGAUG G GGAAGACA	2028	UGUCUUCC GGA GCCGUDAGGC CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	CCAUCCGU	5238
CGGAUGGG G AAGACAAC 2030 AUGGGGAA G ACAACACU 2031 AGUGUUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCUUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCUUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCCUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCCUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CCCCUUAGGC CCCCUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCCCUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGA GCCGUUAGGC CCCUUCAAGA GCCGUUAGGC CCCUUCAAGA GCCCCUUCAACA GAACACUA GAACACAA GAACACAA GAACACAAACAA GAACACAAAACAA GAACAAAAAAAA	90	Ö	2029	UDGUCUUC GGA GCCGUDAGGC GCCCGCGCCCCCCCCCCCCCCCCCCCCCCCCCCC	CCCAUCCG	5239
AUGGGGAA G ACAACACU 2031 AAGGCACC CUAUDAAGU G GGUGCUUUA 2032 DAAGCACC GGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC UAUDAAGU G GUGCUUUA 2033 UADAGCAC GGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC UUUAACGA G GUCCAUCAAGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC AACAAAGU G GUGCCUCC 2035 GAGGGCCC CGGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC AACAAACU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC GUCGCUUUG G GGCCCUCU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC CGCUUUGG G GCCCUCUU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC CGCUUUGG G GCCCUCUU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUCAAGGA GCCGUUAGGC CAGCUCAA G AACUAGAG CAGCUCAA G AACUAGAG AAGAACUA G AACUAGAG AAGAACUA G AGGCUGUC AAGAACUA G AGGCUGUC AAGAACUAGA G AGCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGA G AGCCGUUC AAGAACUAGA G AGCCUGUC AACUAGAG G GAGCUGUC AACUAGAG G GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGG G CCCCUUCAAGGA GCCGUUAGGC CAGCUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGGC AACUAGAG G AGCCUGUC AACAACAA G AGCCUGUC AACAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCCUGUC AACAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCCUGUC AACAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAC AACAACAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAC AACAACAC AACAACAC AACAACAC AACAAC	91	ט	2030	GUUGUCUU GGA GCCGUUAGGC UCCCOOCEANGGA GCCGIIIIAGGC UCCGGG	UUCCCCAU	5240
CUAUDAAGU G GGUGCUUUA 2033 UAAAGCACC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UAUAAGUG G GUGCUUUA 2033 UAAAGCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUUAACGA G GUCAAACA 2034 UGUUUGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUCGCUUU G GGGCCCUC 2036 GAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGCUUUG G GGCCCUCU 2037 AGAGGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUG G GGCCCUCU 2038 CAGAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUCAA G AACUAGAG 2039 CUCUAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUCAA AAGAACUA G AGGAGCUG 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAACUAGAG G AGCUGUC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGAACUAGA G AGGUUUA 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCUGUC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGGUUUA 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGGUUUA 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGGUUUA 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AGGUUUAC 2041 GAACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AGGUUUAC 2041 GAACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AGGUUUAC 2041 GAACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AGGUUUAC 2041 GAACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AGGUUUAC 2041 GAACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AGGUUUACAG G ACCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AUCAAGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G AUCAAGUG GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAG G ACCAUAGAGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC AAUGCCUUACAGA G ACCAUAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC AAUGCCUUCA G ACCAUAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC AACUACAGA G ACCAUAGAGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC AACUACAGA G ACCAUAGAGA GCCGUUAGGA GCCGUUAGGC AACUACAGA G ACCAUAGAGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCCUUACAGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAGGA GCCGUUAG	94	Ü	2031	AGUGUUGU GGA GCCGUUAGGC UCCCOUCAAGGA GCCGIIIIAGGC UCCGGG	ACUUAUAG	5241
UNUAACGA G GUGCUUUAA 2033 UAAAGCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UUUAACGA G GUCAAACA 2034 UGUUUGAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUCGCUUU G GGGCCCUC 2035 GAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUCGCUUU G GGCCCUCU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUG G GCCCUCUU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUG G GCCCUCUG 2038 CAGAGGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUCAA G AACUAGAG 2039 CUCUAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUCAA G AACUAGAG CAGCUCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCUGUC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCUGUC AAAUGACAG G AGCUUUAC AAAUGACAG G GGCUUUAGC CAGCUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUUAGGC CAGCUUAGGC GGA GCCGUUAGGC CAGCUUAGGC CCCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAGA GCCCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CACCUUCAAGGA GCCGUUAGGC CAC	603	ט	2032	AAAGCACC GGA GCCGUUAGGC UCCCOUCHANGGA GCCGCG UCCGGG	CACUUAUA	5242
UUUUAACGA G GUCAAACA 2034 UGUUUGAC GGA GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACAAAGU G GUGCCAUC 2035 GAUGGCAC GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GUCGCUUUG G GGCCCUCU 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUG G GCCCUCUC 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUG G GCCCUCUC 2037 AGAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUCAA G AACUAGAG 2040 CAGCUCCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGAACUAGA G AACUAGAG AAGAACUAGA G AGCUGUC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAACUAGA G AGCUGUC 2042 GGACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACACA G AGCUUUA 2043 UAAACCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGACAGA G GGCUUUAGC AAUGACAGA G GCCGUUAGGC GGA GCCGUUAGGC AAUGACACA G GGCUUAGGC GGA GCCGUUAGGC AAUGACACA G GCCUUAGGC AAUGACAGA G GCCGUUAGGC AAUGACACA G ACCUUAGAC AAUGACAGA G GCCGUUAGGC AAUGACAGA G ACCUUCAAGA GCCGUUAGGC AAUGACACA G ACCUUAGAC AAUGACAGA G ACCUUCAAGA GCCGUUAGGC AAUGACACA G ACCUUAGAC AAUGACACA G ACCUUCAAGA GCCGUUAGGC AAUGACACA G ACCUUCAAGA GCCCUUCAAGGA GCCGUUAGGC AAUGACACA G ACAUAUGC CAAUUACA G ACCUUCAAGA GCCCCUUCAAGGA GCCGUUAGGC AAUGCUCCA AAUGCUCCA AAUGCCCAC AAUGCCCCAC AAUGCCCCAC AACCACCCCAC AAUGCCCCAC AAUGCCCAC AACCACCCAC AACCACCCCAC AACCACCCAC AACCACC	510	ט	2033	UAAAGCAC GGA GCCGUUAGGC UCCCGUCAAAGA GCCGIIIJAGGC UCCGGG	UCGUUAAA	5243
AACAAAGU G GUGCCAUC 2035 GAGGGCCC GGA GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGCUUUG G GGCCCUCU 2037 AGAGGGCC GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUGG G GCCCUCUG 2038 CAGAGGGC GGA GCGGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUUGG G GCCCUCUG AAGAACUAG G AGCUGUC AAGAACUAG G AGGCUCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAGAACUAG G AGGCUGUC AAGAACUAG G AGGCUGUC AAUGACAG G AGGUUUA AAUGACAG G AGGUUUA CAACUAGA G AGGUUUA AAUGACAG G AGGUUUA CAACUAGAG G AGGUUUA AAUGACAG G AGGUUUA CAACUAGAG G AGGUUAACC AAUGACAG AAUGACAG AAUGACAG AAUGACAG CACUUAGGC CACUUAGGC AAUGACAG AAUGACAG AAUGACAG CACUUAGGC CACUUAGGC AAUGACAG AAUGACAG CACUUAGGC CACUUCAAGGA CACUUAGGC CACCUUAGGC CACCUUAG	523	ט	2034	UGUUUGAC GGA GCCGUUAGGC UCCCGGCCAACAA GCCGUUAGGC UCCGGG	ACUUUGUU	5244
GUCGCUUU G GGGCCCUCU 2036 GAGGGCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCGCUUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CGCUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCACUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCUUAGGC GCCCUUAGGC GCCC	336	ש	2035	GAUGGCAC GGA GCCGUUAGGC OCCCGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	AAAGCGAC	5245
UCGCUUUG G GGCCCUCUG CGCUUUGG G GCCCUCUG CAGCUCCA CAGCUCCA AAGAACUA G AACUAGAG CAGCUCCU GAA GCCGUUAGGC CAGCUCCU GAACUAGA GAACUAGA GAACUAGA GAACAGCU GAACUAGA GAACAGCU GAACUAGA GAACAGCU GAACUAGA GAACAGCU AAAUGAC AAAUGACA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC AAAUGACA AAAUGACA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGCC CCCUUCAAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCCUUCAACAGA GCCGUUAGCC CCCC	562	ט	2036	GAGGGCCC GGA GCCGUDAGGC GCCCGCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	CAAAGCGA	5246
CGCUUUGG G GCCCUCUG CGGCUUNGG G GCCCUCUG CAGAGGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAGCUCAA G AACUAGAG 2040 CAGCUCCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAACUAGA G AGGUGUC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCUGUC AAAUGACA G GAGGUUUA 2043 UAAACCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAAUGACA G GAGGUUUA 2044 GUAAACCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAAUGACA G GAGGUUUAC AAUGACAG G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CUGACAGGA G GUUACAG GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACAG G GCGUUAGGC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACAG G ACAUAUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACAG G ACAUAUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAUGCUUCA G ACAUAUGC COAGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACHICA G AACAAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACHICA G AACAAGUC GCA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACHICA G AACAAGUC GCA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CAACHICA G AACAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CAACHICA G AACAAGGA GCAACAGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CAACHICA G AACAAGGA GCCGUUAGGA GCCGUUAGGC CAACHICA G AACAAGGA GCCGUUAGGA GCCGUUAGGC CAACHICA G AACAAGGA GCCGUUAGGA GCCGUU	563	ט	2037	AGAGGGCC GGA GCCGOOAGGC OCCCOCCATACO GCCGOOAGGC UCCGGG	CCAAAGCG	5247
CAGCUCAA G AACUAGAG AAGAACUA G AGGAGCUG AAGAACUAG G GAGCUCCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAACUAGA G AGGCUGUCC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACUAGAG G AGCUGUCC 2042 GGACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAAUGACAG G AGGUUUAC AAUGACAG G AGGUUUAC AAUGACAG G GUUUACAG G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGACAGGA G GUUUACAG G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGACAGGA G GUUUACAG G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGACAGGA G GUUUACAG G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACA G ACAUAUGC 2045 GCAUAUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACA G ACAUAUGC 2046 GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAAAGIIICA G AACAAUGG CCAUUAGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAAAGIIICA G AACAAUGG CCAUUAGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAAAGIICA G AACAAUGG CCAAAUGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAAAGIICA G AACAAUGG CCAAAUGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CAAAGIICA G AACAAUGG CCAAAUGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CAAAGIICA G AACAAUGG CCAAAUGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CAAAGIICA G AACAAUGG CCAAAUGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CAAAAGACACAAAUGGC CCAAAGAGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CAAAAGACACAAAGAAAAGAAAAAAAAAA	564	cecunnee e eccanana	2038	CAGAGGGC GGA GCCGUDAGGC DCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	UUGAGCUG	5248
AAGAACUAGA G AGGAGCUGU GAA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GAACUAGA G GAGCUGUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACUAGA G AGCUGUCC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAAUGACA G AGGUUUACA G AGGUUUACA G AGGUUUACA G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GCGUUAGGC AUGCUUACA G ACAUAUGC 2046 GCCAUAUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CCCUUCAAGGA GCCGUUAGGC CAAACUUCAA GA AACAAUGG CCAUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAAACUUCAAGGA GCCGUUAGGC CCAACUUCAAGGA GCCGUUAGGC CAAACUUCAAGGA GCCGUUAGGC CCAACUUCAAGGA GCCGUUAGGC CCCCUUCAAAGGA GCCGUUAGGC CCCCUUCAAGGA GCCGUUAGGC CCAACUUCAAGGA GCCGUUAGGC CCCCUUCAAAGGA GCCGUUAGGC CCAACUUCAAGGA GCCGUUAGGC CCCCUUCAAAGGA GCCGUUAGGC CCCUUCAAACUUCAAGGA GCCGUUAGGC CCCCUUCAAACUUCAAGGA GCCGUUAGGC CCCCUUCAAACUUCAAGGA GCCGUUAGGC CCCCUUCAAACUUCAAGA GCCGUUAGGC CCCCUUCAAACUUCAACAA GCAAAUGGC CCCUUCAAACUUCAAACAA GCAAAACAAACAAACAAAACA	581	CAGCUCAA G AACUAGAG	2039	CUCUAGUU GGA GCCGUUAGGC CCCCCCTITICAAAGA GCCGUUAGGC UCCGGG	UAGUUCUU	5249
GAACUAGA G GAGCUGUC 2041 GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCAAGGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	687	ט	2040	CAGCUCCU GGA GLUGUDAGGU UCCUGUCA GCCGUUAGGC UCCGGG	UCUAGUUC	5250
AACUAGAG G AGCUGUCC 2042 GGACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AAAUGACA G GAGGUUUAC AAUGACAG G AGGUUUAC UGACAGGA G GUUUACAG G COGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGACAGGA G GUUUACAG GGUUUACA G ACAUAUGC AUGUUACA G ACAUAUGC AUGUUACAG G ACCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACA G ACAUAUGC AACUAGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU 2047 AACUUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACHUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACHUCA G ACCAUUAGGC CCCUUCAAGGA GCCGUUAGGC CAACHUCA G ACCAUUAGGC CCCUUCAAGGA GCCGUUAGGC	689	ט	2041	GACAGCUC GGA GCCGUDAGGC GCCGCGCGGG GCCGUUAGGC UCCGGG	CUCUAGUU	5251
AAAUGACA G GAGGUUUAC AAUGACAGGA G GCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UGACAGGA G GUUUACAG G AGGUUUACA GGUUUACA G ACAUAUGC AUGCUUCA G ACCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACA G ACAUAUGC AUGCUUCA G AUCAAGUU AACUUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU AACUUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU CAACHIICA G AACAAUGG 2048 CCAUUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACHIICA G AACAAUGG 2048 CCAUUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	069	ט	2042	GGACAGCU GGA GCCGUDAGGC GCCCGCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	GUCAUUU	5252
AAUGACAGGA G AGGUUUACA UGACAGGA G GUUUACAG GGUUUACA G ACAUAUGC AACUUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU 2047 AACUUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AACAUAGGU 2048 CAAUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACAUGGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	708		2043	UAAACCUC GGA GCCGUDAGGC OCCCGGGGTTTCAAGGA GCCGTIUAGGC UCCGGG	CUGUCAUU	5253
UGACAGGA G GUUUACAG 2045 CUGUAAAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC GGUUUACA G ACAUAUGC 2046 GCAUAUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACAAUGG 2048 CCAUUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC CAACAAUGG 2048	709	ច	2044	GUAAACCU GGA GCCGUUAGGC UCCCGCCCAACGA GCCGUUAGGC UCCGGG	UCCUGUCA	5254
GGUUUACA G ACAUAUGG 2046 GCAUAUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC AUGCUUCA G AUCAAGUG 2048 CCAUUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC COCCUUCAAGGA GCCGUUAGGC COCCUUCAAGA GCCGUUAGGA GCCGUUAGA GCCCUUCAAGA GCCGUUAGA GCCGUUAGA GCCGUUAGA GCCCGUUAGA GCCCGUUAGA GCCCUUAGA GCCGUUAGA GCCGUUAGA GCCGUUAGA GCCGUUAGA GCCGUUAGA GCCGUUAG	711	ט	2045	CUGUAAAC GGA GCCGUUAGGC UCCCGGCGGGGGGGGGG	UGUAAACC	5255
AUGCUUCA G AUCAAGUU 2047 AACUUGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	719	ט	2046	GCAUAUGU GGA GCCGUDAGGC CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	UGAAGCAU	5256
CANGIIICA G AACAAUGG 2048 CCAUUGUU GGA GCCGOGAGCC	732	ש	2047	AACUUGAU GGA GCCGUAAGGC UCCCGGG GCCGUUAGGC UCCGGG	UGAACUUG	5257
CARGOOCA O TATOLOGICA	1743	CAAGUUCA G AACAAUGG	2048	CCAUUGUU GGA GCCGOOAGGC CCCCCCCCCCCCCCCCCCCCCCCC		

1750	AGAACAAU G GCCUCAUU	2049	AAUGAGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	AUUGUUCU	5258
1768	AUGCUUUU G GGGCCCUU	2050	AAGGGCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	AAAAGCAU	5259
1769	nechnane e eeccana	2051	AAAGGGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CAAAAGCA	5260
1770	ecunnae e eccanna	2052	GAAAGGGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CCAAAAGC	5261
1783	UUUCAUCA G GAAAUGGA	2053	UCCAUTUC GGA GCCGUUAGGC UCCCTUCAAGGA GCCGUUAGGC	UCCGGG	UGAUGAAA	5262
1784	UUCAUCAG G AAAUGGAG	2054	CUCCAUUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CUGAUGAA	5263
1789	CAGGAAAU G GAGCUGUC	2055	GACAGCUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	AUUUCCUG	5264
1790	AGGAAAUG G AGCUGUCU	2056	AGACAGCU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CAUTUCCU	5265
1821	CAGCUUGA G AGUAAGGG	2057	CCCUUACU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	UCAAGCUG	5266
1827	GAGAGUAA G GGAUUAAC	2058	GUUAAUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	UUACUCUC	5267
1828	AGAGUAAG G GAUUAACC	2059	GGUUAAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CUUACUCU	5268
1829	GAGUAAGG G AUUAACCC	2060	GGGUUAAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CCUUACUC	5269
1842	ACCCUCCA G AACAGCCA	2061	UGGCUGUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	UGGAGGGU	5270
1853	CAGCCAGU G GAUGAAUG	2062	CAUUCAUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	ACUGGCUG	5271
1854	AGCCAGUG G AUGAAUGG	2063	CCAUUCAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CACUGGCU	5272
1861	GGAUGAAU G GCACAGUG	2064	CACUGUGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	AUUCAUCC	5273
1875	GUGAUCGU G GACAGCAC	2065	GUGCUGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	ACGAUCAC	5274
1876	UGAUCGUG G ACAGCACC	2066	GGUGCUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CACGAUCA	5275
1887	AGCACCGU G GGAAAGGA	2067	UCCUUUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	ACGGUGCU	5276
1888	GCACCGUG G GAAAGGAC	2068	GUCCUUUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CACGGUGC	5277
1889	CACCGUGG G AAAGGACA	2069	UGUCCUUU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	ರಾದ್ಯತಿಕೆ	CCACGGUG	5278
1893	GUGGGAAA G GACACUUU	2070	AAAGUGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	ರ್ದಾಡಡಡ	UUUCCCAC	5279
1894	UGGGAAAG G ACACUUUG	2071	CAAAGUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	ರಾದಾಗಿ	CUUUCCCA	5280
1916	UAUCACCU G GACAACGC	2072	GCGUUGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	AGGUGAUA	5281
1917	AUCACCUG G ACAACGCA	2073	ueceuucu eca ecceuuacec ucccuucaacea ecceuuacec	വഠദേദദ	CAGGUGAU	5282
1946	CCUUCUCU G GGAUCCCA	2074	UGGGAUCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	AGAGAAGG	5283
1947	CUUCUCUG G GAUCCCAG	2075	cuescauc esa ecceunasec ucccuucaagea ecceunagec	UCCGGG	CAGAGAAG	5284
1948	UUCUCUGG G AUCCCAGU	2076	ACUGGGAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CCAGAGAA	5285
1957	AUCCCAGU G GACAGAAG	2077	CUUCUGUC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	ACUGGGAU	5286
1958	UCCCAGUG G ACAGAAGC	2078	GCUUCUGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	CACUGGGA	5287
1962	AGUGGACA G AAGCAAGG	2079	ccuuecuu ega ecceunaeec ucccuucaaeea ecceunaeec	DCCGGG	UGUCCACU	5288
1969	AGAAGCAA G GUGGCUUU	2080	AAAGCCAC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	ucceee	ungcuncu	5289
1972	AGCAAGGU G GCUUUGUA	2081	UACAAAGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC	UCCGGG	ACCUUGCU	5290

1983	UUUGUAGU G GACAAAA	2082	UUUUUGUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	ACUACAAA	5291
1984	UUGUAGUG G ACAAAAC	2083	GUUUUUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	೧୯୯୯	CACUACAA	5292
2001	ACCAAAAU G GCCUACCU	2084	AGGUAGGC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUUUGGU	5293
2020	AAAUCCCA G GCAUUGCU	2085	AGCAAUGC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UGGGAUUU	5294
2031	AUUGCUAA G GUUGGCAC	2086	GUGCCAAC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UUAGCAAU	5295
2035	CUAAGGUU G GCACUUGG	2087	CCAAGUGC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AACCUUAG	5296
2042	UGGCACUU G GAAAUACA	2088	UGUAUUUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AAGUGCCA	5297
2043	GGCACUUG G AAAUACAG	2089	CUGUAUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAAGUGCC	5298
2148	ACGAACAA G GACACCAG	2090	CUGGUGUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	ບນອນນດອນ	5299
2149	CGAACAAG G ACACCAGC	2091	GCUGGUGU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	condonce	5300
2175	AGCCCUCU G GUAGUUUA	2092	UAAACUAC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ນດດອອອ	AGAGGGCU	5301
2200	UUCGCCAA G GAGCCUCC	2093	GGAGGCUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UUGGCGAA	5302
2201	UCGCCAAG G AGCCUCCC	2094	GGGAGGCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CUUGGCGA	5303
2219	AAUUCUCA G GGCCAGUG	2095	CACUGGCC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UGAGAAUU	5304
2220	AUUCUCAG G GCCAGUGU	2096	ACACUGGC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CUGAGAAU	5305
2254	CAGUGAAU G GAAAAACA	2097	UGUUUUUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUCACUG	5306
2255	AGUGAAUG G AAAAACAG	2098	CUGUUUUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAUUCACU	5307
2271	GUUACCUU G GAACUACU	2099	AGUAGUUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AAGGUAAC	5308
2272	UNACCUUG G AACUACUG	2100	CAGUAGUU GGA	GCCGUUAGGC	UCCCUUCAAGGA	gccgunaggc	೧୯୯୯	CAAGGUAA	5309
2280	GAACUACU G GAUAAUGG	2101	CCAUUAUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	೧୯୯୯	AGUAGUUC	5310
2281	AACUACUG G AUAAUGGA	2102	UCCAUUAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAGUAGUU	5311
2287	UGGAUAAU G GAGCAGGU	2103	ACCUGCUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUAUCCA	5312
2288	GGAUAAUG G AGCAGGUG	2104	CACCUGCU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	CAUUAUCC	5313
2293	AUGGAGCA G GUGCUGAU	2105	AUCAGCAC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC		ucceee uecuccau	5314
2310	GCUACUAA G GAUGACGG	2106	CCGUCAUC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UUAGUAGC	5315
2311	CUACUAAG G AUGACGGU	2107	ACCGUCAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	ರದ್ದಡಡಡ	CUUAGUAG	5316
2317	AGGAUGAC G GUGUCUAC	2108	GUAGACAC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	GUCAUCCU	5317
2330	CUACUCAA G GUAUUUCA	2109	UGAAAUAC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UUGAGUAG	5318
2356	ACACGAAU G GUAGAUAC	2110	GUAUCUAC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	AUUCGUGU	5319
2360	GAAUGGUA G AUACAGUG	2111	CACUGUAU GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG	UACCAUUC	5320
2378	AAAAGUGC G GGCUCUGG	2112	CCAGAGCC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC		GCACUUUU	5321
2379	AAAGUGCG G GCUCUGGG	2113	CCCAGAGC GGA	GCCGUUAGGC	UCCCUUCAAGGA	GCCGUUAGGC		CGCACUUU	5322
2385	CGGGCUCU G GGAGGAGU	2114	ACUCCUCC GGA	GCCGUUAGGC	eccennagec ucccuucaagga	GCCGUUAGGC	UCCGGG	AGAGCCCG	5323

2386	GGCUCUG G GAGGAGUU	2115	AACUCCUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG CAGAGCCC	5324
2387	GGCUCUGG G AGGAGUUA	2116	UAACUCCU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG CCAGAGCC	5325
2389	CUCUGGGA G GAGUUAAC	2117	GUUAACUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG UCCCAGAG	5326
2390	UCUGGGAG G AGUUAACG	2118	CGUUAACU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG CUCCCAGA	5327
2405	CGCAGCCA G ACGGAGAG	2119	CUCUCCGU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	nccees neecnece	5328
2408	AGCCAGAC G GAGAGUGA	2120	UCACUCUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	uccede eucudecu	5329
2409	GCCAGACG G AGAGUGAU	2121	AUCACUCU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	ncceee cenaneea	5330
2411	CAGACGGA G AGUGAUAC	2122	GUAUCACU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	uccese uccencue	5331
2427	CCCCAGCA G AGUGGAGC	2123	GCUCCACU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC UCCGGG	rccege uecuegee	5332
2431	AGCAGAGU G GAGCACUG	2124	CAGUGCUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG ACUCUGCU	5333
2432	GCAGAGUG G AGCACUGU	2125	ACAGUGCU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG CACUCUGC	5334
2449	ACAUACCU G GCUGGAUU	2126	AAUCCAGC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG AGGUAUGU	5335
2453	ACCUGGCU G GAUUGAGA	2127	UCUCAAUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	uccege agccageu	5336
2454	CCUGGCUG G AUUGAGAA	2128	UUCUCAAU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC UCCGGG	ICCGGG CAGCCAGG	5337
2460	UGGAUUGA G AAUGAUGA	2129	UCAUCAUU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG UCAAUCCA	5338
2477	AAUACAAU G GAAUCCAC	2130	GUGGAUUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG AUUGUAUU	5339
2478	AUACAAUG G AAUCCACC	2131	GGUGGAUU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	uccege cauuguau	5340
2489	UCCACCAA G ACCUGAAA	2132	UUUCAGGU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	uccege uugeugga	5341
2505	AUUAAUAA G GAUGAUGU	2133	ACAUCAUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG UUAUUAAU	5342
2506	UVAAVAAG G AUGAUGUU	2134	AACAUCAU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG CUUAUUAA	5343
2540	UUUCAGCA G AACAUCCU	2135	AGGAUGUU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG UGCUGAAA	5344
2550	ACAUCCUC G GGAGGCUC	2136	GAGCCUCC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	uccege gaggaugu	5345
2551	CAUCCUCG G GAGGCUCA	2137	UGAGCCUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG CGAGGAUG	5346
2552	AUCCUCGG G AGGCUCAU	2138	AUGAGCCU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG CCGAGGAU	5347
2554	CCUCGGGA G GCUCAUUU	2139	AAAUGAGC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC L	UCCGGG UCCCGAGG	5348
2565	ucauvugu g gcuucuga	2140	UCAGAAGC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG ACAAAUGA	5349
2611	UCCCACCU G GCCAAAUC	2141	GAUJUGGC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG AGGUGGGA	5350
2631	GACCUGAA G GCGGAAAU	2142	AUUUCCGC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC UCCGGG	rccege uncageuc	5351
2634	CUGAAGGC G GAAAUUCA	2143	UGAAUTUC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG GCCUUCAG	5352
2635	UGAAGGCG G AAAUUCAC	2144	GUGAAUTU GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG CGCCUUCA	5353
2644	AAAUUCAC G GGGGCAGU	2145	ACUGCCCC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG GUGAAUUU	5354
2645	AAUUCACG G GGGCAGUC	2146	GACUGCCC GGA GCCGUUAGGC UCCCUUCAAGGA	GCCGUUAGGC U	UCCGGG CGUGAAUU	5355
2646	AUUCACGG G GGCAGUCU	2147	AGACUGCC GGA GCCGUUAGGC UCCCUUCAAGGA	accennage uccees	rccggg ccgugaau	5356

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2647	UUCACGGG G GCAGUCUC	2148	GAGACUGC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee cc	CCCGUGAA	5357
2669	UCUGACUU G GACAGCUC	2149	GAGCUGUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AA	AAGUCAGA	5358
2670	CUGACUUG G ACAGCUCC	2150	GGAGCUGU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CA	CAAGUCAG	5359
2680	CAGCUCCU G GGGAUGAU	2151	AUCAUCCC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGGAGCUG	5360
2681	AGCUCCUG G GGAUGAUU	2152	AAUCAUCC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CA	CAGGAGCU	5361
2682	GCUCCUGG G GAUGAUUA	2153	UAAUCAUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee cc	CCAGGAGC	5362
2683	CUCCUGGG G AUGAUUAU	2154	AUAAUCAU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	nacege ac	CCCAGGAG	5363
2698	AUGACCAU G GAACAGCU	2155	AGCUGUUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUGGUCAU	5364
2699	UGACCAUG G AACAGCUC	2156	GAGCUGUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CA	CAUGGUCA	5365
2750	UGAUCUCA G AGACAAGU	2157	ACUUGUCU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	uccese us	UGAGAUCA	5366
2752	AUCUCAGA G ACAAGUUC	2158	GAACUUGU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee nc	UCUGAGAU	5367
2802	AUCCCAAA G GAAGCCAA	2159	UNGGCUUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	uccege uu	UUUGGGAU	5368
2803	UCCCAAAG G AAGCCAAC	2160	GUUGGCUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	uccese cu	CUUUGGGA	5369
2817	AACUCUGA G GAAGUCUU	2161	AAGACUUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee nc	UCAGAGUU	5370
2818	ACUCUGAG G AAGUCUUU	2162	AAAGACUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	uccege cu	CUCAGAGU	5371
2839	UUAAACCA G AAAACAUU	2163	AAUGUUUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee ne	UGGUUUAA	5372
2860	UUGAAAAU G GCACAGAU	2164	AUCUGUGC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AU	AUUUUCAA	5373
2866	AUGGCACA G AUCUUUUC	2165	GAAAAGAU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ucceee ue	UGUGCCAU	5374
2886	GCUAUUCA G GCUGUUGA	2166	UCAACAGC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ucceee ue	UGAAUAGC	5375
2898	GUUGAUAA G GUCGAUCU	2167	AGAUCGAC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ucceee uu	UUAUCAAC	5376
2914	UGAAAUCA G AAAUAUCC	2168	GGAUAUUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ucceee ue	UGAUUUCA	5377
2958	CCUCCACA G ACUCCGCC	2169	GGCGGAGU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ucceee ue	UGUGGAGG	5378
2968	CUCCGCCA G AGACACCU	2170	AGGUGUCU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	uccege ug	UGGCGGAG	5379
2970	CCGCCAGA G ACACCUAG	2171	CUAGGUGU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee nc	ncneecee	5380
3034	CCAUUCCU G GCAUUCAC	2172	GUGAAUGC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AG	AGGAAUGG	5381
3059	AAUUAUGU G GAAGUGGA	2173	UCCACUUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACAUAAUU	5382
3060	AUUAUGUG G AAGUGGAU	2174	AUCCACUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CA	CACAUAAU	5383
3065	GUGGAAGU G GAUAGGAG	2175	CUCCUAUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG AC	ACUUCCAC	5384
3066	UGGAAGUG G AUAGGAGA	2176	UCUCCUAU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG CA	CACUUCCA	5385
3070	AGUGGAUA G GAGAACUG	2177	CAGUUCUC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	uccege ua	UAUCCACU	5386
3071	GUGGAUAG G AGAACUGC	2178	GCAGUUCU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ucceee cu	CUAUCCAC	5387
3073	GGAUAGGA G AACUGCAG	2179	CUGCAGUU GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	ncceee nc	UCCUAUCC	5388
3096	AUAGCCUA G GGCUGAAU	2180	AUUCAGCC GGA GCCGUUAGGC	GC UCCCUUCAAGGA	GCCGUUAGGC	UCCGGG UA	UAGGCUAU	5389

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3097	UAGCCUAG G GCUGAAUU	2181	AAUUCAGC GGA	GCCGUUAGGC UCC	CCUUCAAGGA	GCCGUUAGGC L	AAUUCAGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUAGGCUA	5390
3113	UUUUGUCA G AUAAAUAA	2182	UVAUUUAU GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	UNAUUUAU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UGACAAAA	5391
3174	GUAUUUUA G ACUUCCUG	2183	CAGGAAGU GGA	GCCGUUAGGC UC	CUUCAAGGA	GCCGUUAGGC L	CAGGAAGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAAUAC	5392
3264	GUAUTUUA G ACUUCCUG	2183	CAGGAAGU GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	CAGGAAGU GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UAAAAUAC	5392
3185	UUCCUGUA G GGGCGAU	2184	AUCGCCCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	sccennassc L	AUCGCCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UACAGGAA	5393
3238	UUCCUGUA G GGGGCGAU	2184	AUCGCCCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	AUCGCCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UACAGGAA	5393
3275	UUCCUGUA G GGGGCGAU	2184	AUCGCCCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	AUCGCCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG UACAGGAA	5393
3186	UCCUGUAG G GGGCGAUA	2185	UAUCGCCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	UAUCGCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACAGGA	5394
3239	UCCUGUAG G GGGCGAUA	2185	UAUCGCCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	UAUCGCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACAGGA	5394
3276	UCCUGUAG G GGGCGAUA	2185	UAUCGCCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC L	UAUCGCCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CUACAGGA	5394
3187	CCUGUAGG G GGCGAUAU	2186	AUAUCGCC GGA	GCCGUUAGGC UCA	CCUUCAAGGA	GCCGUUAGGC L	AUAUCGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUACAGG	5395
3240	CCUGUAGG G GGCGAUAU	2186	AUAUCGCC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC 1	AUAUCGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUACAGG	5395
3188	CUGUAGGG G GCGAUAUA	2187	UAUAUCGC GGA	GCCGUUAGGC UCA	CCUUCAAGGA	GCCGUUAGGC 1	VAUAUCGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCUACAG	5396
3241	CUGUAGGG G GCGAUAUA	2187	UAUAUCGC GGA	GCCGUUAGGC UCA	CCUUCAAGGA	GCCGUUAGGC 1	UAUAUCGC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCCUACAG	5396
3277	CCUGUAGG G GGCGAUAA	2188	UVAUCGCC GGA	GCCGUUAGGC UCA	CCUUCAAGGA	GCCGUUAGGC L	UNAUCGCC GGA GCCGUUAGGC UCCCUUCAAGGA GCCGUUAGGC UCCGGG CCUACAGG	5397
3278	CUGUAGGG G GCGAUAAA	2189	UUUAUCGC GGA	GCCGUUAGGC UC	CCUUCAAGGA	GCCGUUAGGC 1	UNIVAUCGE GGA GECGUIVAGGE UCCCUUCAAGGA GECGUIJAGGE UCEGGG EECUACAG	5398

Input Sequence = NM_001285. Cut Site = G/.

Arm Length = 8. Core Sequence = GGAGGAAACUCC CU UCAAGGACAUCGUCCGGG
Underlined region can be any X sequence or linker, as described herein.

NM_001285 (Homo sapiens chloride channel, calcium activated, 1 (CLCA1) mRNA, 3311 bp)

249.021

Table IX: Human CLCA1 GeneBloc and Target Sequence

						R7
		Cubetroto	#Idd	Alias	GeneBioc	2 ,
Pos	Substrate	Substrate Cog ID				Sed ID
		or bac				So.
		+	10043	10042 FOT CA1.8211.23 GB3 3	B ucauqqaCaAaAaTaGaCaCaTsuaccuug B	5417
821	CAAGGUAAGGCAUUUGUCCAUGA	5399	19043			5418
1141	CAAAGAAGCUCCAAACAAGCAAA	5400	19837	19837 hCLCA1:1141L23 GB3.3	- 1	0171
1646		5401	19841	19841 hCLCA1:1646L23 GB3.3	n	5417
1040		+	19836	hCLCA1:2464L23 GB3.3	B cauucucAgAgTgCgCgAgGgCgCgagguaug B	5420
7464		1	19839	19839 hCT.CA1:2542L23 GB3.3	B uncugcuGgAgAgAgCgAgCguugcuug B	5421
2542					B dacaucag, A, A, G, C, C, A, C, A, aaugagc B	5422
2577	GCUCAUTUGUGGCUUCUGAUGUC	5404	19840	19840 IICHCA1:23/123 GD3:3		5423
2711	HALIGACCAUGGAACAGCUCACAA	5405	19842	19842 hCLCA1:2711L23 GB3.3		
2000		5406	19838	hCLCA1:3087L23 GB3.3	- 1	5424
3007	-		09600	hcr.ca1-69 Rz-7 allyl	gegenegaag cucaugaccgunaggcccaa Aucaaga B	5425
69	TCTTGATICT CACC		2	atable .		
					Transfer of the Agucago B	5426
70	CTTGATTCTTCACCT	5408	20961	20961 hCLCA1-70 Rz-7 allyl		
				stable	B COLLEGE CASSILLES B	5427
7.1	TTGATTCTTCACCTT	5409	20968	20968 hCLCA1-71 CHz-7 allyl		! ! !
!				stab1e	מייייים מיייים מייים מיייים מייים מייי	5428
72	TGATTCTTCACCTTC	5410	20962	20962 hclcal-72 Rz-7 allyl)
!			_	stable		5429
73	GATTCTTCACCTTCT	5411	20963	hCLCA1-73 Rz-7 ally1	aggsasaggu cuchucaggccguuaggcccaa ragaauc	
1				stable	d Commercial and	0 6 7 1
445	TCCTGATTTCATTGC	5412	20964	hCLCA1-445 Rz-7 allyl	ggcgagagucaggaccgunaggcceaa Aucagga	
1				stable		

0965 hCLCA1-446 Rz-7 allyl ugggcgaug cuGAuGaggccguuaggccGaa Aaucagg B 5431		0966 hCLCA1-447 Rz-7 allyl csusgscsaau cUGAuGaggccguuaggccGaa Aaaucag B 5432		-448 CHz-7 c _s c _s u _s g _s caa c <u>u</u> GAuGaggccguuaggccGaa Iaaauca B 5433		0967 hCLCA1-450 Rz-7 allyl ususcscsugc cuchucaggccguuaggccGaa Augaaau B 5434	
A1-446 Rz-7 allyl	1e	A1-447 Rz-7 allyl	1e	0969 hCLCA1-448 CHz-7	allyl staBle	A1-450 Rz-7 allyl	٩
0965 hcLCA1-	stable	0966 hcLCA1-	stable	.0969 hCLCA1-	allyl s	.0967 hcLCA1-	atah1p
5413		5414		5415		5416	
CCTGATTTCATTGCA		CTGATTTCATTGCAG		TGATTTCATTGCAGG		ATTTCATTGCAGGAA	
446		447		448		450	

lower case = 2'OMe; A = riBo AUpper Case = DeoxyriBose (DNA) s = phosphorothioate linkagesB = inverted aBasic $\overline{U} = 2$ -C-allyl Uridine G = riBo G

Table X: PCR Primers

249.021

PCR primer	Seq ID No
CGAAATCTCGAGCAGACTTGTGGGAGAAGCTC	5435
AGCACACTGCAGAGTTGCTGGCCAGCTTACCTCC	5436